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XXXI—THE NOMENCLATURE OF "BROMUS."

O. STAPF.

Linnaeus's original concept of *Bromus* (Gen. Pl. 15; 1737) was entirely that of the *secalinus*-group, that is, of *Serrafalcus* Parl. This is evident from his description and the figures which he quotes to illustrate it. In Species Plantarum he widened the concept so as to include species not referable to the *secalinus*-group, heading, however, his list of species with *B. secalinus*. This should therefore *technically* be considered as the standard species of the genus and any subsequent segregation would have to treat the group which included *B. secalinus* as representing *Bromus*. Panzer's* procedure in giving the *sterilis*- and *erectus*-group a new name (*Zerna*) was so far quite correct; but he vitiated his definition of *Zerna* by including such grasses as *Vulpia ligustica* and *V. myurus*, *Brachypodium distachyum* and even *Bromus macrostachyus*, a true *Bromus*, suo sensu. Hence Parlatore's observation "hinc patet Zernae suae, quae multas diversorum generum species comprehendit, characteres minime exactos tribuisse" (Rar. Pl. Sic. fasc. ii. 5; 1844) and his consequent rejection of Panzer's definitions of *Bromus* and *Zerna*. Having thus got rid of Panzer's proposal, Parlatore proceeds (l.c. p. 6) to a more homeogenous grouping which has found general approval except in so far as the taxonomic rank of the groups is concerned. The two segregates of Linnaeus's *Bromus* proposed by Parlatore are *Bromus*, comprising "Bromos Linnaei genuinos alioquorumque botanicorum ut et Bertolonii, Kochii, etc.," and *Serrafalcus* represented by "Bromis secalinis."

The term "*Bromi Linnaei genuini*" was unfortunately chosen, as the genuine bromuses of Linnaeus of 1737 were evidently all species of the *secalinus*-series and the genuine bromuses of his Species Plantarum equally evidently a medley of species of *Bromus* sens. lat., *Festuca*, *Vulpia* and *Brachypodium*. He expressed no doubts about any of them. It was just a case of an originally clear concept becoming blurred by the addition of incongruous elements. Bertoloni and Koch did in fact not propose a group of "Bromi *Linnaei* genuini," but merely of "Bromi genuini," that is species of *Bromus* which in *their* opinion constituted a group typical of the genus *Bromus* as revised by *them*. It was a new start and a new sectional name. Their concepts of *Bromus* were so much clearer and

*In Denkschr.-Akl. München, 1813, 296 (1814).

		Bromus sens. lat. and possible segregates.					Foreign elements.		
		1.	2.	3.	4.	5.	Festuca	Vulpia	Brachypodium
Linn. Gen. Pl.	1737				BROMUS				
Sp. Pl. and	1753 1762		BROMUS		BROMUS		BROMUS	BROMUS	BROMUS
Beauvais	1812	CERATOCHLOA	BROMUS	BROMUS	BROMUS				
Panzer	1814		ZERNA	ZERNA	BROMUS (+ Zerna sp.)			ZERNA	ZERNA
Dumortier	1823					MICHELARIA			
Bertoloni	1833		Bromi genuini	Bromi festucacei	Bromi secalini		Bromi festucacei		
Koch	1835		Bromi genuini	Bromi festucacei	Bromi secalini	Libertia			
Parlatore	1840		BROMUS	BROMUS	SERRAFALCUS				
Koch	1844		Bromi genuini	Bromi festucacei	Serrafalcus	Libertia			
Grenier & Godron	1856		Eubromus	Festucaria	SERRAFALCUS	MICHELARIA			
Willkomm	1861		Eubromus	Festucaria	SERRAFALCUS				
Bentham	1883	Ceratochloa	Stenobromus	Festucoides	Zeobromus	Zeobromus			
Boissier	1884		Eubromus	Festucaria	Serrafalcus				
Hackel	1887	Ceratochloa	Stenobromus	Festucoides	Zeobromus	Libertia			
Shear	1900	Ceratochloa	Stenobromus	Zerna	Bromus proper				
Ascherson & Graebner	1901	Ceratochloa	Eubromus	Festucaria	Serrafalcus	Michelaria			
Groves	1904		BROMUS	BROMUS	SERRAFALCUS				
Koch (ed. Wohlfarth)	1907	Ceratochloa	Eubromus	Festucaria	Serrafalcus	Michelaria			
Rouy	1913		Eubromus	Festucoides	SERRAFALCUS	MICHELARIA			
Britton & Brown	1913	BROMUS	BROMUS	BROMUS	BROMUS				

so much more natural than Linnaeus's that they have, in principle, been generally accepted, with the result that the *sterilis*-group became now the nucleus of the genus whilst the *secalinus*-series was relegated as it were to the periphery of the genus or cut out and constituted a distinct genus (Parlatore). Bertoloni's, Koch's and Parlatore's grouping of the species is essentially the same as Panzer's if we pass over the unnatural admixtures in the latter's arrangement, i.e., the species of *Vulpia* and *Brachypodium* and *Bromus macrostachys* in *Zerna* ; and Panzer's being prior to that of Bertoloni, Koch and Parlatore, his names ought to stand by the Rules of Nomenclature, that is *Zerna* for the *Bromi genuini and Bromi festucacei* and *Bromus* for the *Bromi secalini or Serrafalcus*, with say *Bromus sterilis* and *B. secalinus* as the respective standard species. This would not affect the nomenclature of the species as long as we take *Bromus* in the wider sense of Bertoloni or Koch, but it would be a most disturbing change wherever literature is concerned in which the smaller groups are given generic rank. Panzer's nomenclature has rightly or wrongly never obtained a footing in literature and to restore it now in the face of an equally good, if not better, nomenclature which runs through the literature of a century would actually violate the spirit underlying the Rules of Nomenclature, although it might satisfy the letter.

Whether *Serrafalcus* should be treated as a genus is a different question. There is much in favour of it and it is actually treated so by many authors. The same applies to *Ceratochloa* and *Michelaria* and some day we may also have to consider the rank of the two remaining sections of *Bromus* sens. lat. the "*Bromi genuini*" (§ *Eubromus*) and the *Bromi festucacei* (§ *Festucaria*). To prepare for this eventuality it will be best to accept one of the species of § *Eubromus* as the standard species of *Bromus*, e.g., *Bromus sterilis*. Should *Festucaria* be segregated, *Zerna* might be revived for it with *Z. erecta* as standard species, whilst *Serrafalcus* would have *S. secalinus* as its standard species.

The accompanying table is intended to show the historical evolution of the concept of *Bromus* and its extension and constriction from 1737 onwards. Groups treated as genera by the authors cited are printed in capitals, those treated as subdivisions of the genus *Bromus* are in ordinary type.

XXXII.—TROPICAL AFRICAN PLANTS: III.*

J. Hutchinson and J. M. Dalziel.

Samydaceae.

Homalium Dalzielii *Hutch.*, sp. nov. ; foliis late ellipticis obscure serrulatis nervis lateralibus utrinsecus 10 distincta.

Arbor ; ramuli flavido-tomentelli. *Folia* late elliptica, utrinque rotundata, apice oblique acuminata, 6–14 cm. longa, 4–8 cm. lata,

*Continued from *K.B.* 1928, p. 32.

infra minute puberula, nervis lateralibus utrinsecus 10 a costa sub angulo 45° abeuntibus, tertiariis laxis subparallelis; petioli 1 cm. longi, tomentelli. *Inflorescentia* axillaris, usque ad 8 cm. longa, tomentella. *Flores* breviter pedicellati, pedicellis basi articulatis.

Nigeria: Southern Provinces; Ikoyi Plains, Jan., *Dalziel* 1356; Lagos, *Dalziel* 1259 (type); Iddo, Dec., *Millen* 42.

Homalium djalonis *A. Chev.* Explor. Bot. Afr. Occid. Franç. 283, nomen; affinis *H. molle* Stapf, sed indumento longe piloso differt.

Arbor; ramuli juniores molliter villosi. *Folia* oblique ovato-elliptica, breviter acuminata, basi inaequilatera, 15–18 cm. longa, 7–10 cm. lata, obtuse serrata, infra costa et nervis lateralibus longe pilosa, nervis lateralibus utrinsecus 5–6 arcuatis. *Inflorescentia* paniculata, ubique molliter pilosa; pedicelli 2 mm. longi. *Calyx* pilosus, lobis linearibus 3 mm. longis. *Petala* fructifera oblanceolata, 8 mm. longa, 3 mm. lata, breviter pubescentia.

French Guinea: Diaguissa Plateaux, Apr., *Chevalier* 12692 (type).

Homalium alnifolium *Hutch. et J. M. Dalz.*, sp. nov.; foliis crasse crenatis late ellipticis basi cuneatis distincta.

Arbor magna; ramuli glabrescentes. *Folia* late et breviter elliptica, basi cuneata, abrupte acuminata, usque ad 12 cm. longa et 6·5 cm. lata, crasse crenata, glabra, nervis lateralibus utrinsecus 6–8 a costa sub angulo acuto abeuntibus. *Inflorescentia* axillaris, elongata, usque ad 20 cm. longa, puberula; pedicelli brevissimi, supra medium articulati. *Calyx* puberulus, lobis triangularibus 1 mm. longis. *Petala* fructifera oblanceolata, 8 mm. longa, 2 mm. lata.

Sierra Leone: Pujehun, Feb., *Lane-Poole* 141 (type); Panguma, Mar., *Lane-Poole* 19; Bunabu, Mar., *Lane-Poole* 16; Makump, July, *Thomas* 948; Mayoso, Aug., *Thomas* 1477. Nigeria: Southern Provinces; Modakeke, *Foster* 206; Degema, *Talbot* 3791.

Homalium dolichophyllum *Gilg* ms.; species foliis magnis usque ad 30 cm. longis basi cordatis distincta.

Arbor usque ad 16 m. alta; ramuli glabri. *Folia* ovato-elliptica, basi cordata, breviter obtuse acuminata, 12–30 cm. longa, usque ad 12 cm. lata, obscure crenata, glabra, infra crebre et oblique reticulata, nervis lateralibus utrinsecus circiter 10 arcuatis. *Inflorescentia* paniculata, usque ad 30 cm. longa, minute puberula; flores subsessiles. *Calyx* turbinatus, puberulus, lobis oblongo-lanceolatis 3 mm. longis. *Petala* fructifera oblongo-lanceolata, 1–1·3 cm. longa.

Extends from French Guinea to Gabon. We have seen the following specimens:—*Lane-Poole* 150. *Scott Elliot* 5532. *Farmar* 249A. *Vigne* 230. *Pobéguin* 640. *Dalziel* 8302. *Mann* 232. *Yates* 35. *Talbot* 1419, 1514. *Zenker* 1305, 1659, 2669, 2799,

3411, 4404, 4417. *Staudt* 242. *Preuss* 1379. *Bates* 1833. *Mildbraed* 8064. *Soyaux* 72.

Homalium Aylmeri *Hutch. et J. M. Dalz.*, sp. nov.; foliis subintegris, inflorescentia paniculata distincta.

Arbor magna; ramuli glabri. *Folia* late obovato-elliptica, basi cuneata, breviter acuminata, 10–12 cm. longa, 5–6 cm. lata, subintegra, glabra, nervis lateralibus utrinsecus 8 arcuatis infra reticulatis; petioli 1 cm. longi. *Inflorescentia* paniculata, minute puberula; pedicelli brevissimi. *Calyx* puberulus, lobis triangularibus 1 mm. longis. *Petala* fructifera oblanceolata, 8 mm. longa, brevissime pubescentia.

Sierra Leone: Kambui, Mar., *Aylmer* 580.

Homalium Smythei *Hutch. et J. M. Dalz.*, sp. nov.; affinis *H. africano* Benth., sed axe inflorescentiae pilis longis patulis, floribus distincte pedicellatis, petalis fructiferis 8 mm. longis differt.

Arbor: ramuli juniores tenuiter pilosi. *Folia* oblongo-elliptica, basi rotundata, apice obtuse acuminata, 12–18 cm. longa, 5–6 cm. lata, obscure crenata, glabra, infra crebre reticulata, nervis lateralibus utrinsecus 6 arcuatis laxe reticulatis. *Inflorescentia* laxe paniculata, tenuiter pilosa et puberula. *Calyx* adpresse tomentellus, lobis lineari-lanceolatis 1·5 mm. longis. *Petala* fructifera oblanceolata, minute puberula, 5 mm. longa.

Sierra Leone: *Smythe* 55 (type); Pujehun, Febr., *Aylmer* 7.

Casearia inaequalis *Hutch. et J. M. Dalz.*, sp. nov.; affinis *C. Dinklagei* Gilg, sed foliis basi inaequalibus oblongo-lanceolatis acuminatis crenulatis differt.

Arbor parva; ramuli leviter angulati, glabri. *Folia* oblongo-lanceolata, acuminata, basi valde inaequilatera, 10–12 cm. longa, 3–3·5 cm. lata, crenulata, glabra, nervis lateralibus utrinsecus circiter 8; petioli 5–8 mm. longi. *Flores* glomerati, pedicellis 3–4 mm. longis. *Sepala* obovata, glabra, 3 mm. longa. *Staminodia* villosa.

Sierra Leone: Bandajuma, May, *Aylmer* 73.

Casearia bridelioides *Mildbr.* ms.; affinis *C. Barteri* Mast., sed floribus subsessilibus, sepalis pubescentibus, foliis obovato-ellipticis nervis lateralibus utrinque prominentibus differt.

Arbor usque ad 27 m. alta; ramuli angulares, glabri, internodiis 2 cm. longis. *Folia* obovata vel obovato-elliptica, basi cuneata, breviter obtuse acuminata, 7–9 cm. longa, 4–5 cm. lata, glabra, integra, nervis lateralibus utrinsecus 6–7 utrinque prominulis. *Flores* glomerati, subsessiles; bracteae tomentellae. *Sepala* extra pubescentia. *Fructus* obovoideus, 3 cm. longus, glaber.

Nigeria: Southern Provinces; Oui River, *Sankey* 17. French Cameroons: Dengdeng, Mar., *Mildbraed* 8768 (type).

Soyauxia velutina *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *S. floribundae* Hutch., sed stipulis sub anthesin persistentibus, ramulis pilosis, costa infra pilosa differt.—*S. laxiflora* A. Chev. Explor. Bot. Afr. Occid. Franç. 288, non Gilg.

Frutex ; ramuli juniores tenuiter pilosi. *Folia* oblongo-lanceolata, acutissime acuminata, basi subobtusa, 8–13 cm. longa, 2–4 cm. lata, costa pilosa excepta glabra, nervis lateralibus utrinsecus 10–12 ; stipulae lineari-lanceolatae, 6–7 mm. longae, pubescentes. *Inflorescentia* axillares, simplex vel pauce ramosa, velutina. *Flores* sessiles. *Sepala* oblongo-elliptica, adpresse velutina, circiter 0·5 cm. longa. *Petala* patula, oblongo-elliptica, 6 mm. longa, intra glabra. *Fructus* ellipsoideus, apice pubescens.

Ivory Coast : Bingerville, etc., *Chevalier* (type). Nigeria : Southern Provinces ; Atigere, Febr. *Millen* 147.

Adenia tenuispira *Hutch. et J. M. Dalz.*, comb. nov.—*Modecca tenuispira* Stapf in Journ. Linn. Soc. 37 : 102 (1905). *M. nigricans* A. Chev. Explor. Bot. Afr. Occid. Franç. 287.

Liberia : Sinoe Basin, *Whyte* (type) ; Gbanga, *Linder* 731. Ivory Coast : Bouroukrou, Jan., *Chevalier* 17002 ; Aboisso on the Sanvi, Mar., *Chevalier* 17812.

Adenia Dinklagei *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *A. gracili* Harms, sed sepalis inferne connatis, foliis majoribus integris facile distinguenda.

Frutex scandens ; ramuli teretes, glabri, glaucescentes. *Folia* late ovata, late et leviter caudata, obtuse et breviter acuminata, 6–10 cm. longa, 5·5–9 cm. lata, integra, glabra, supra atrobrunnea, infra pallidiora, nervis lateralibus utrinsecus circiter 4 ; petioli 6 cm. longi ; cirrhi axillares, spiraliter contorti, apici breviter bifurcati. *Paniculae* elongatae, usque ad 25 cm. longae, ramulis cymulosis brevibus paucifloris ; pedicelli 4 mm. longi, apice articulati. *Sepala* infra medium connata, oblongo-elliptica, 8 mm. longa.

Liberia : Grand Bassa, *Dinklage* 2109.

Trochomeria Dalzielii *Bak. f. ex Hutch.* in Flora West Trop. Afr. 1 : 177, fig. 78 ; species foliis digitate 3–7-lobatis lobis linearibus ad anguste ovatis infra scabrido-setosis distincta.

Scandens ; caules graciles, sulcati, glabri, e rhizomate dioscoreiforme carnoso oriundi. *Folia* ubique dense scabrido-setosa, fere ad basin digitate 3–7-lobata, segmentis linearibus ad anguste ovatis acutis integris vel triangulari-lobatis vel dentatis. *Flores* ♂ et ♀ subfasciculati vel breviter cymosi ; pedicelli usque ad 1·5 cm. longi. *Calycis* lobi ♂ triangulari-subulati, minuti. *Petala* lineari-lanceolata, acuta, usque ad 5 cm. longa, glabra. *Fructus* turbinatus, glaber.

Nigeria : Northern Provinces ; Kontagora, Dec., *Dalziel* 280 (type) ; Abinsi, *Dalziel* 736 ; Katagum, *Dalziel* 374 ; Nassarawa Prov., Hepburn 686 A ; Mada Hills, *Hepburn* 70 ; Nupe, *Barter* ; Vom, Bauchi Plateau, *Dent-Young* ; Jira, *Lely* 126.

Gerrardanthus nigericus *Hutch. et J. M. Dalz.*, sp. nov. ; foliis ovato-rotundatis basi cordatis integris glabris distincta.

Scandens ; caules graciles, cirrhis axillaribus gracillimis spiraliter contortis ; ramuli glabri, sulcati. *Folia* ovato-rotundata, basi late cordata, acute cordato-acuminata, 9–12 cm. longa, 7–9 cm. lata, tenuissima, integra, basi eglandulosa et pedatim 6–7-nervia, glabra ; petioli usque ad 5 cm. longi. *Sepala* ovata, circiter 2 mm. longa, glabra et venosa. *Petala* inaequalia, oblonga, circiter 1 cm. longa. *Fructus* junior oblongo-oblanceolatus, 2 cm. longus, apice cornutus, glaber.

Gold Coast : Kumasi, *Cummins* 146. Nigeria : Southern Provinces ; Oban, *Talbot* 1454 (type) ; Degema, *Talbot* 3628.

Melothria fernandensis *Hutch. et J. M. Dalz.*, sp. nov. ; floribus numerosis fasciculatis breviter pedicellatis, foliis breviter 5-lobatis ambitu pentagonis late cordatis distincta.

Scandens, usque ad 7 m. alta ; ramuli fere glabri. *Folia* ambitu pentagona, leviter 5-loba, basi late cordata, apice acute apiculata, 4–6 cm. longa, usque ad 5 cm. lata, supra scabrida, infra setulosa ; petioli 2–3 cm. longi ; cirrhi gracillimi, simplices, usque ad 8 cm. longi. *Flores* axillares, fasiculati ; pedicelli 3–5 mm. longi ; flores ♂ calyce tubuloso 5 mm. longo glabro. *Fructus* subglobosus, apiculatus, circiter 4 mm. diametro, reticulatus.

Fernando Po. : 1000 m., *Mann* 628.

Rhaphidiocystis Caillei *Hutch. et J. M. Dalz.*, sp. nov. ; valde affinis R. *Mannii* Hook. f., sed ramulis pubescentibus, foliis haud acuminatis, petiolis scabridis nec setosis, sepalis florum masculorum integris, fructibus ellipsoideis setis aurantiacis ornatis differt. —*R. Mannii* A. Chev. Explor. Bot. Afr. Occid. Franç. 295, non Hook. f.

French Guinea : Kouria, Aug., *Caille in Herb. Chevalier* 15006 ; Bilima, Sept., *Caille in Herb. Chevalier* 15036 (type).

Momordica bracteata *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *M. Charantiae* Linn., sed floribus masculis umbellatis, pedunculo apice bractea magna orbiculari cordata ornato differt.

Scandens ; ramuli graciles, minute puberuli. *Folia* latissime ovata, breviter et acute lobato-dentata, interdum profunde 3-lobata, late cordata, acute triangulari-acuminata, circiter 10 cm. longa et 8 cm. lata, infra leviter puberula ; petioli 3 cm. longi, leviter alati ; cirrhi inaequaliter furcati. *Flores* ♂ plurimi, umbellati, bractea magna latissime ovato-cordata circumdati ; pedunculi 4–5 cm.

longi; pedicelli circiter 0·5 cm. longi, puberuli. *Calycis lobi* triangulari-lanceolati, 3 mm. longi, puberuli. *Petala* tomentella.

Nigeria: Southern Provinces; Eket, *Talbot* 3133.

Physedra eglandulosa *Hutch.et J. M. Dalz.*, comb. nov.—*Adenopus eglandulosa* Hook. f. in Oliv. Fl. Trop. Afr. 2: 529. *Physedra elegans* Harms et Gilg in Engl.. Bot. Jahrb. 34: 353 (1904). *P. macrantha* Gilg l.c. *P. djalonis*, *P. ivorensis*, *P. sylvatica* A. Chev. Explor. Bot. Afr. Occid. Franç. 294, nomina. *Cephalandra ivorensis* et *C. sylvatica* A. Chev. l.c. 295, nomina.

French Sudan: near Timbuktu, *Chevalier*. French Guinea: Kouria, July, *Caille in Herb. Chevalier*, 14942, 14943. Sierra Leone: Karema, *Addison*: Port Loko, Sept., *Addison*: without locality, *Morson*.

Liberia: Fishtown, *Dinklage* 1846: Monrovia, *Linder* 34. Ivory Coast: various localities, *Chevalier* 22235, 22610, 22673, 21548, 22294, 22379, 16063, 16506, 16585, 16658, 17074, 20030, 16433, 19523. Gold Coast: Akwapim, Dec., *Johnson* 514. Togo: *Beaumann* 495. Nigeria: Northern Provinces; *Yates* 40; Southern Provinces; near Lagos, *Moloney*.

Ochnaceae.

Ochna elegans *Hutch. et J. M. Dalz.*, comb. nov.—*Monelasmum elegans* Van Tiegh. in Ann. Sci. Nat. Ser. 8, 16: 329. *Ouratea elegans* A. Chev. Explor. Bot. Afr. Occid. Franç. 108.

Ivory Coast: Upper Cavally, top of Mt. Dô, 950 m., May. *Chevalier* 21426. Togo: Lome, *Warnecke* 83: Atakpame, Nov., *Mildbraed* 7462.

Ochna Smythei *Hutch. et J. M. Dalz.*, sp. nov.; affinis *O. eleganti* Hutch. et J. M. Dalz., sed foliis ellipticis vel obovato-ellipticis abrupte acuminatis latioribus marginibus dentibus incurvis differt.

Ramuli glabri. *Folia* elliptica vel obovato-elliptica, subabrupte acuminata, basi acuta, circiter 11 cm. longa et 4–4·5 cm. lata, crenulata, membranacea, nervis lateralibus utrinsecus circiter 15 utrinque prominulis. *Inflorescentia* racemoso-paniculata, usque ad 15 cm. longa. *Flores* glomerati, longe pedicellati, pedicellis gracilibus usque ad 1 cm. longis basin versus articulatis. *Sepala* elliptica, 4 mm. longa. *Petala* late obovata, 6–7 mm. longa.

Sierra Leone: near Heirakakum, *Smythe* 124.

Ochna kibbiensis *Hutch. et J. M. Dalz.*, sp. nov.; affinis *O. Afzelii* R. Br., sed foliis acute acuminatis elliptico-lanceolatis latioribus sepalis fructiferis usque ad 3 cm. longis differt.

Frutex parvus; ramuli laxe lenticellati; stipulae lineari-lanceolatae, usque ad 1 cm. longae. *Folia* elliptico-lanceolata, utrinque acuta, 12–18 cm. longa, 3–6 cm. lata, utrinsecus acute serrulata, glabra, nervis lateralibus circiter 12–15 utrinque prominulis.

Flores non visi. *Calyx* fructiferus ruber, lobis obovato-lanceolatis 3 cm. longis, usque ad 1·5 cm. latis nervosis. *Receptaculum* crassum, 1 cm. diametro. *Carpella* oblongo-ellipsoidea, nitida, 1·3 cm. longa, demum nigra.

Gold Coast: Kibbi Hills, fr. Dec., *Johnson* 266: Akim, Adjapoma, Mar., *Glover* (type): Amentia forest, *Irvine* 528: without locality, *Evans* 19.

Ouratea Cameronii *Hutch. et. J. M. Dalz.*, sp. nov.; affinis *O. Mannii* Engl., sed floribus breviter subcorymboso-racemosis, foliis crebre serrulatis differt.—*O. corymbosa* A. Chev. Explor. Bot. Afr. Occid. Franç. 107, non Engl.

Frutex parvus usque ad 0·5 m. altus. *Folia* conferta, elongato-obovata, basi longe attenuata, apice late triangulari-acuminata, usque ad 30 cm. longa et 10 cm. lata, irregulariter serrulata, nervis lateralibus utrinsecus circiter 25 a costa sub angulo lato abeuntibus, nervis tertiariis crebris undulatis. *Racemi* subcorymbosi, breves, circiter 6 cm. longi; pedicelli robusti, 6 mm. longi. *Sepala* ovato-lanceolata, 8 mm. longa. *Petala* obovata, vix matura circiter 6·5 mm. longa. *Fructus* non visus.

Ivory Coast: various localities, *Chevalier* 16364, 16441, 17411, 17795, 19229. Gold Coast: *Burton & Cameron* (type).

Ouratea subcordata *Hutch. et J. M. Dalz.*, comb. nov.—*Gomphia subcordata* Stapf in Journ. Linn. Soc. 37: 88 (1905). *Ouratea Mannii* A. Chev. Explor. Bot. Afr. Occid. Franç. 108, non Engl.

Sierra Leone: near Laoma, Nov., *Smythe* 89. Liberia: Kakatown, *Whyte*. Ivory Coast: in the virgin forest between the middle Sassandra and the middle Cavally, *Chevalier* 19209; on the railway near Azaguie, Sept., *Chevalier* 22278.

Ouratea amplectens *Hutch. et J. M. Dalz.*, comb. nov.—*Gomphia amplectens* Stapf in Journ. Linn. Soc. 37: 87 (1905).

Liberia: Kakatown, *Whyte*.

Ouratea Turnerae *Hutch. et J. M. Dalz.*, comb. nov.—*Gomphia Turnerae* Hook. f. in Hook. Niger Fl. 273 (1849). *Ouratea Afzelii* Gilg in Engl. Bot. Jahrb. 33: 267 (1903). *O. excavata* A. Chev. Explor. Bot. Afr. Occid. Franç. 108, nomen.

Sierra Leone: Leicester Peak, Dec., *Scott Elliot* 3834; without locality, *Turner*; *Vogel* 104, 134; *Don*. Ivory Coast: from Ahinta to Aboisso, Mar., *Chevalier* 17763.

Ouratea Morsonii *Hutch. et J. M. Dalz.*. sp. nov.; foliis obscure et distanter dentatis dentibus longe setosis, stipulis subpersistentibus distincta.

Ramuli glabri. *Folia* oblongo-elliptica, basi breviter cuneata, apice late sed acute acuminata, 9–13 cm. longa, 3–3·5 cm. lata,

obscure et distanter setoso-serrata, nerviis lateralibus utrinsecus circiter 15 prominulis intermediis minus distinctis; petioli 5 mm. longi, transverse rugosi. *Racemi* (imperfecti tantum visi) terminales; flores geminati; pedicelli 1 cm. longi. *Sepala* elliptica, 8 mm. longa. *Fructus* non visus.

Sierra Leone: without locality *Morson.*

Ouratea ambacensis *Hutch. et J. M. Dalz.*, sp. nov.; affinis *O. congestae* Engl., sed nervis lateralibus utrinque prominentibus, inflorescentiis elongatis longe pedunculatis differt.

Arbor parva; ramuli stipulis persistentibus triangulari-acutis circiter 4 mm. longis ornati. *Folia* elongato-oblonga, basi breviter cuneata, acute acuminata, usque ad 25 cm. longa et 8 cm. lata, minute serrulata, nervis lateralibus utrinsecus circiter 18 arcuatis et intra marginem elongatis. *Inflorescentia* elongata, longe pedunculata, multiflora. *Flores* glomerati; pedicelli 5–6 mm. longi, basin versus articulati. *Sepala* ovata, obtusa, 5 mm. longa. *Petala* obovata, late unguiculata, 8 mm. longa. *Fructus* non visus.

Nigeria: Southern Provinces; Ambas Bay, Feb., *Mann* 12 (type); Tiko, *Dunlap* 171.

Ouratea Barteri *Hutch. et J. M. Dalz.*, sp. nov.; affinis *O. pauciflorae* Gilg, sed petiolis multo longioribus, bracteis basi inflorescentiae deciduis differt.

Frutex 4 mm. altus; ramuli graciles, cinerei. *Folia* lanceolato-elliptica vel leviter obovata, longe et sensim acuminata, 5–11 cm. longa, 2–3·5 cm. lata, minute serrulata, nervis lateralibus numerosissimis parallelis; petioli 6 mm. longi. *Inflorescentia* parva, pauciflora; *flores* geminati vel solitarii; pedicelli fere 1 cm. longi, basin versus articulati. *Sepala* oblongo-elliptica, 8 mm. longa.

Nigeria: Southern Provinces; Brass, *Barter* 13, 1876 (type).

Ouratea calophylloides *Hutch. et J. M. Dalz.*, sp. nov.; ab *O. calophylla* Engl. pedicellis supra basin articulatis, inflorescentiis longioribus robustis differt.

Ramuli teretes; stipulae triangulares, 2–3 mm. longae. *Folia* elongato-obovata, abrupte acuminata, basi cuneata, 5–20 cm. longa, 4–8 cm. lata, integra, nervis lateralibus numerosissimis inconspicuis a costa sub angulo fere recto abeuntibus; petioli 5 mm. longi. *Racemi* densiflori, circiter 10 cm. longi; flores glomerati; pedicelli 1 cm. longi, supra basin articulati. *Sepala* oblonga, 1 cm. longa, 4–5 mm. lata, glabra. *Petala* non visa.

Fernanda Po: *Vogel* 104.

Ancistrocladaceae.

Ancistrocladus uncinatus *Hutch. et J. M. Dalz.*, sp. nov.; affinis *A. guineensi* Oliv., sed foliis tenuiter coriaceis ellipticis in petiolum alatam abrupte attenuatis apice rotundatis supra crebre

reticulatis 6–8 cm. longis 3–4 cm. latis, nervis lateralibus utrinsecus circiter 5, uncis gracilibus, inflorescentia breviter corymbosa, pedicellis 3 mm. longis, petalis extra tomentosis differt.

Nigeria : Southern Provinces ; Eket., *Talbot* 3108.

MYRTACEAE.

Eugenia nigerina *A. Chev.* Explor. Bot. Afr. Occid. Franç. 268, nomen subnudum ; affinis *E. uniflorae* Linn., sed pedicellis brevissimis, ramulis molliter pubescentibus, foliis haud acuminatis differt.

Frutex 5–8 m. altus, cortice albido, ramulis molliter pubescentibus. *Folia* subopposita, ovata, basi cordata, apice rotundata vel emarginata, 2·5–4 cm. longa, 2·–3 cm. lata, utrinque punctata, nervis lateralibus utrinsecus circiter 5 intra marginem conjunctis. *Flores* axillares, albi, adoriferi ; pedicelli 8 mm. longi, glabri. *Receptaculum* late, turbinatum, 2 mm. longum. *Calycis* lobi rotundati, 2·5 mm. diametro, glabri. *Petala* late obovata, 3·5 mm. longa.

French Sudan : between Dialiba and Langana, Jan., *Chevalier* 260 ; San, June, *Chevalier* 1075 ; Koulikoro, Oct., *Chevalier* 3010. Ivory Coast : Bettié, on the dunes of the Comoé River, Mar., *Chevalier* 17556.

Eugenia salacioides *Laws. ex Hutch. et J. M. Dalz.*, sp. nov. ; affinis *E. leonensi* Engl. et Brehm., sed pedicellis brevioribus differt. —*E. salicifolia* Laws. non DC., nec Berg.

Arbor parva vel frutex ; ramuli molliter pubescentes vel subglabri. *Folia* lanceolata vel oblongo-lanceolata, basi acute cuneata, obtuse acuminata, usque ad 8 cm. longa et 3 cm. lata, supra subnitida infra minute punctulata, nervis lateralibus utrinsecus circiter 10 infra prominulis ; petioli graciles, circiter 5 mm. longi. *Flores* axillares, fasciculati, pedicellis gracilibus usque ad 6 mm. longis apicem versus bracteis duabus ovatis ciliatis 0·5 mm. longis instructis. *Receptaculum* glabrum. *Sepala* suborbicularia, 2·5 mm. longa. *Petala* late obovata, apice ciliata, 2·5 mm. longa.

Sierra Leone : Bagroo River, Apr., *Mann* 842 (type) : near Kubusa, Apr., *Scott Elliot* 5476 : near Kafogo, Apr., *Scott Elliot* 5483 ; near Kurusu, Apr., *Scott Elliot* 5542 ; Kahreni, Apr., *Scott Elliot* 5622.

Eugenia Dawei *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *E. memecyloidei* Benth., sed foliis oblongo-lanceolatis, nervis lateralibus ascendentibus 6 late arcuatis differt.

Ramuli elongati, fere glabri. *Folia* oblongo-lanceolata, utrinque subacuta, apice breviter acuminata, 6–11 cm. longa, 2·5–3·5 cm. lata, infra minutissime puberula, nervis lateralibus utrinsecus circiter 6 intra marginem conjunctis ; petioli 5 mm. longi. *Flores* axillares, dense glomerati, albi, pedicellis 4–6 mm. longis breviter pubescentibus. *Receptaculum* appresse pubescens. *Calyx* circiter 2·5 mm. diametro. *Petala* suborbicularia, 4·5 mm. diametro.

Sierra Leone : Mata Kakun, Mar., *Dawe* 454. Vernacular name " Lalikpoi."

Napoleona lutea *Bak. f. ex Hutch. et J. M. Dalz.*, sp. nov. ; affinis *N. imperiali* P. Beauv., sed floribus luteis axillaribus subsessilibus differt.

Ramuli flexuosi, glabri. *Folia* obovato-elliptica, late acuminata, basi late cuneata, 15–20 cm. longa, 6–9 cm. lata, glabra, nervis lateralibus untrinsecus circiter 8 inter nervos oblique venosis ; petioli 1 cm. longi. *Flores* axillares, subsessiles, lutei. *Calyx* 0·8 cm. longus, extra glaber, lobis ovatis acutis 0·5 cm. longis apicem versus glandulis duabus nigris ornatis. *Corolla* 1·5 cm. longa, apice dentata.

Nigeria : Southern Provinces ; Eket, *Talbot* 3173.

Napoleona reptans *Bak. f., ex Hutch. et J. M. Dalz.*, sp. nov. ; species foliorum nervo intramarginale haud evoluto floribus e ramis vetustioribus ortis distincta.

Ramuli glabri. *Folia* oblongo-elliptica, obtuse cuspidato-acuminata, basi rotundata, 15–20 cm. longa, 5–8 cm. lata, glabra, nervis lateralibus utrinsecus circiter 8 infra prominulis ; petioli 0·5 cm. longi. *Flores* in ramis vetustioribus glomerati, subsessiles. *Calyx* patulus, profunde lobatus, extra papillosus, lobis ovato-triangularibus acutis 8 mm. longis apicem versus glandulis nigris ornatis. *Corolla* 2 cm. longa, margine crenulata. *Corona* cupularis, 1 cm. longa, apice breviter multilobata.

Nigeria : Southern Provinces ; Eket, *Talbot* 3175.

Napoleona leonensis *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *N. reptanti* Bak. f., sed floribus axillaribus, foliis intra margines nervo instructis differt.

Arbor parva ; ramuli glabri, angulati. *Folia* oblonga vel oblongo-elliptica, abrupte et longe acuminata, 12–15 cm. longa, 4–5·5 cm. lata, infra laxe reticulata, glabra, nervis lateralibus utrinsecus circiter 6 intra marginem prominenter conjunctis inter junctos et marginem nervo continuo instructis. *Flores* axillares, subsessiles, roseo tincti ; bracteae 3-seriatae, superpositae, orbiculares, usque ad 5 mm. diametro. *Calycis* lobi triangulares, dense papillosi, 6 mm. longi. *Corolla* multidentata, usque ad 1·5 cm. longa.

French Guinea : Kouria, Nov., *Chevalier* 15054. Sierra Leone : Talla Hills, Feb., *Scott Elliot* 4892 : Commendi, *Aylmer* 264 (type). Liberia : Banga, Oct., *Linder* 1236.

MELASTOMATACEAE.

Phaeoneuron gracile *Hutch. et J. M. Dalz.*, comb. nov.—*Dicellandra gracilis* A. Chev. Explor. Bot. Afr. Occid. Franç. 276, nomen ; affinis *P. Moloneyi* Stapf, sed pedicellis fere 1·5 cm. longis, foliis oblongo-lanceolatis acute acuminatis basi leviter cordatis 10 cm. longis 4·5 cm. latis tenuibus glabris acute denticulatis, inflorescentia glabra differt.

Ivory Coast : several localities, *Chevalier* 19360, 19361, 19635, 19733, 21206.

Calvoa monticola *A. Chev.* Explor. Bot. Afr. Occid. Franç. 275, nomen ; a *C. hirsuta* Hook. f. ubique glabra, foliis obovatis basi inaequilateris differt.

Herba usque ad 30 cm. alta, glabra. *Folia* obovata, basi inaequilatera, apice obtuse acuminata, 4–6 cm. longa, 2·5–3·5 cm. lata, prominenter 3-nervia, setoso-denticulata ; petioli plani, purpurascentes, usque ad 2·5 cm. longi. *Flores* breviter cymosi, rosei ; pedicelli 2 mm. longi. *Receptaculum* turbinatum, 4 mm. longum, glabrum. *Calycis* lobi triangulares, 1·5 mm. longi. *Petala* obovata, 1 cm. longa. *Fructus* turbinatus, 8 mm. longus, squamis late emarginatis venosis coronatus.

French Guinea : Nzerekore, 600 m., *Collenette* 37. Liberia : Kassa Ta, *Linder* 829. Ivory Coast : various localities, *Chevalier* 19218, 19476, 19537, 21187, 21259.

Amphiblema grandifolium *A. Chev.* Explor. Bot. Afr. Occid. Franç. 276, nomen ; affinis *A. cymoso* Naud., sed caulibus pilosis, foliis ovatis cordatis acutis usque ad 20 cm. longis et 15 cm. latis fere glabris setuloso-denticulatis basi circiter 7–9-nervis, cymis fructiferis haud secundis differt.

Ivory Coast : between Ft. Binger and Toula, July, *Chevalier* 19541 ; between Nekaougnie and Grabo, July, *Chevalier* 19599 ; Grabo, Aug., *Chevalier* 19710.

Dissotis Pobeguinii *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *D. cinerascenti* Hutch., sed calycis lobis setis tenuibus longis intermediis instructis, foliis 5-nervis differt.

Herba usque ad 45 cm. longa ; caulis erectus, glaber. *Folia* lanceolata vel elliptico-lanceolata, subsessilia, acuta, usque ad 7 cm. longa et 3 cm. lata, glabra, margine remote setoso-ciliata, conspicue 5-nervia. *Flores* paniculati, speciosi. *Calycis* tubus campanulatus, glaber, lobis late lanceolatis acutis ciliatis circiter 1 cm. longis lobulis setiformibus intermediis instructis. *Petala* ovato-elliptica, circiter 3 cm. longa.

French Guinea : Douné, Aug., *Pobéguin* 1695.

Dissotis rupicola *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *D. cinerascenti* Hutch., sed calycis lobis et pedicellis brevioribus, foliis basi breviter angustatis differt.

Herba ramosa ad nodos radicans. *Folia* lanceolata, basi breviter angustata, apice acuta, usque ad 3 cm. longa, circiter 0·5 cm. lata, obscure trinervia, parce setosa, infra pallidiora. *Flores* solitarii, breviter pedicellati, bracteis duabus lanceolatis circiter 1 cm. longis instructi. *Receptaculum* fructiferum glabrum, ellipsoideum, 1 cm. longum. *Calycis* lobi lanceolati, acute acuminati, 1 cm. longi, persistentes.

Sierra Leone: Sugar Loaf Mt., Dec., *Scott Elliot*, 3977 (type): without locality, *Hart.*

Dissotis leonensis *Hutch. et J. M. Dalz.*, sp. nov.; floribus precoceis breviter cymosis, calycis lobis deciduis, receptaculo verrucoso distincta.

Frutex ramosus, ramulis scabridis internodiis brevibus. *Folia* elliptica, basi rotundata, apice acuta, 5 cm. longa, 3 cm. lata, prominenter 5-nervia, supra scabrido-puberula, infra molliter tomentella; petioli 1 cm. longi, tomentosi. *Flores* precocei, cymosi; pedicelli 3-4 mm. longi. *Receptaculum* late campanulatum, 6 mm. longum, extra rugoso-tomentosum. *Calycis* lobi late lanceolati, 6 mm. longi, extra stellato-tomentelli. *Petala* obovata, 1·5 cm. longa, margine puberula.

Sierra Leone: Kessewe Hills, 500 m., Apr., *Lane-Poole* 126.

Dissotis Gilgiana *Hutch. et J. M. Dalz.*, sp. nov.; affinis *D. incanae* Triana, sed foliis late ovatis amplexicaulibus circiter 7–9-nerviis differt.—*D. incana* var. *Gilgiana* A. Chev. Explor. Bot. Afr. Occid. Franç. 274.

Herba usque ad 1 m. alta; rami robusti, molliter tomentelli. *Folia* ovata, amplexicaulia, subacuta, 2–3 cm. longa, 1·5 cm. lata, 7–9-nervia, utrinque stellato-tomentella. *Flores* racemosi, rubri; pedicelli 5 mm. longi. *Receptaculum* globosum, scabrido-puberulum, circiter 7 mm. longum. *Calycis* lobi ovato-triangulares, 5 mm. longi, intra prominenter nervosi. *Petala* margine puberula.

French Sudan: Sicoro, Jan., *Chevalier* 228 (type): between Taranora and Kangola, May, *Chevalier* 846. French Guinea: Toukan to Bouria, Apr., *Chevalier* 12924; Douné, Dec., *Chevalier* 14634. Sierra Leone: near Erimakuna, *Scott Elliot* 5218. Ivory Coast: Mankono circle, July, *Chevalier* 21997.

Dissotis Lecomteana *Hutch. et J. M. Dalz.*, sp. nov.; affinis *D. capitatae* Hook. f., sed caulibus pilis mollibus glandulosis, calycis lobis medio linea pilorum differt.

Rami hirsuti. *Folia* ovata, acute acuminata, basi rotundata, 6–8 cm. longa, 2·5–4 cm. lata, prominenter 5-nervia, supra setulosa, infra laxe pubescentia, nervis hirsutis; petioli 1·5–2 cm. longi. *Flores* capitati. *Involucri bracteae* ovatae, acutae, foliaceae, 1·5 cm. longae et 1 cm. latae. *Receptaculum* glabrum. *Calycis* lobi triangulari-lanceolati, 8 mm. longi, medio longe setosi, margine breviter ciliati. *Petala* glabra.

French Guinea: Dindea, Sept., *Pobéguin* 1699 (type). Sierra Leone: near Falaba, *Scott Elliot* 5174; Erimakuna, Mar., *Scott Elliott* 5241.

Memecylon Bakerianum *Hutch. et J. M. Dalz.*, sp. nov.; affinis *M. Zenkeri* Gilg, sed foliis longe petiolatis obovato-ellipticis basi longe cuneatis, floribus fasciculatis differt.—*M. Machairacme* Bak. f. in Cat. Talb. Nig. Pl. 128, non Gilg.

Frutex; ramuli minute verrucosi. *Folia* obovato-elliptica, sensim acuminata, basi longe cuneata, 12–16 cm. longa, 6–8 cm. lata, glabra, nervis lateralibus utrinsecus circiter 8 a costa sub angulo lato abeuntibus nervum intramarginalem formantibus; petioli 1 cm. longi. *Flores* axillares, fasciculati; pedicelli 2–3 mm. longi, glanduloso-scabridi. *Calyx* extra glanduloso-verrucosus, lobis ovatis 3·5 mm. longis. *Petala* late elliptica, 8 mm. longa.

Nigeria: Southern Provinces; Oban, *Talbot* 203.

Memecylon viride *Hutch. et J. M. Dalz.*, sp. nov.; affinis *M. candido* Gilg, sed foliis caudato-acuminatis floribus glomeratis differt.

Frutex; ramuli glabri, cortice cinereo. *Folia* oblongo-elliptica, longe caudato-acuminata, basi breviter cuneata, 10–14 cm. longa, 3–5 cm. lata, acumine circiter 2 cm. longo, nervis lateralibus numerosis vix prominulis; petioli brevissimi. *Flores* minimi, glomerati, numerosi; pedicelli usque ad 2·5 mm. longi. *Alabastra* leviter pentagona, 1 mm. longa. *Petala* late obovata, glabra.

Nigeria: Southern Provinces; Oban, *Talbot* 496.

Memecylon Aylmeri *Hutch. et J. M. Dalz.*, sp. nov.; affinis *M. Doniano* Planch., sed pedunculo commune brevissimo, fructibus ellipsoideis, foliis abrupte acuminatis distincte petiolatis differt.

Frutex; ramuli glabri. *Folia* oblonga, abrupte acuminata, basi breviter cuneata, 10–15 cm. longa, 3–5 cm. lata, enervia, glabra, acumine 1·5 cm. longo. *Flores* axillares, glomerati; pedunculus 2 mm. longus. *Calyx* cupulatus, 1 mm. longus. *Fructus* ellipsoideus, 1·5 cm. longus, stramineus, glaber, calyce persistente coronatus.

French Guinea: Mt. Nzo, 600-700 m., *Chevalier* 21002. Sierra Leone: Kennema, Oct., *Aylmer* 627 (type).

Memecylon Dinklagei *Gilg ex Hutch. et J. M. Dalz.*, sp. nov.; affinis *M. strychnoidei* Baker, sed costa et nervis lateralibus foliorum supra impressis, pedicellis brevissimis differt.

Frutex; ramuli leviter flexuosi, elongati, glabri. *Folia* ovata vel ovato-elliptica, obtuse acuminata, basi brevissime cuneata et rotundata, 8–12 cm. longa, 5–6·5 cm. lata, coriacea, rugosa, basi prominenter trinervia, nervis lateralibus indistinctis supra impressis. *Flores* parvi, breviter cymosi, perdecidui; pedicelli 1–2 mm. longi. *Calyx* breviter dentatus, glaber.

Sierra Leone: Yonibana, Nov., *Thomas* 4816. Liberia: Grand Bassa, Sept., *Dinklage* 2032 (type).

Memecylon Fosteri *Hutch. et J. M. Dalz.*, sp. nov.; affinis *M. cinnamomoidei* Gilg, sed foliis breviter et sensim acuminatis brevioribus, pedunculis 2–3-floris, pedicellis brevioribus differt.

Ramuli cinerei, juniores purpurascentes. *Folia* elliptica, utrinque subacuta, 6–8 cm. longa, 3–4 cm. lata, basi trinervia,

nervis lateralibus utrinque prominulis. *Cymae* fasciculatae, breviter pedunculatae, triflorae, pedicellis 4 mm. longis. *Calyx* turbinatus, medio contractus, 2·5 mm. longus. *Petala* coriacea, 2·5 mm. longa, stylum exsertum setiformum amplectentia.

Nigeria : Southern Provinces ; without locality, Oct., *Foster* 359.

Combretaceae.

Combretum bauchiense *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *C. herbaceo* G. Don, sed foliis infra glandulosis vel glabris, ovario et calyce leviter pubescente differt.

Caules erecti, annui, e rhizomate lignoso, glabri. *Folia* juniora lanceolata, acuta, 4·5 cm. longa, usque ad 1 cm. lata, glabra, resinosa, infra reticulata ; petioli usque ad 8 mm. longi. *Racemi* axillares, usque ad 10 cm. longi ; axis tenuiter pubescens. *Ovarium* molliter pubescens, 3 mm. longum. *Calyx* late turbinatus, 3 mm. longus, late dentatus, extra parce pubescens. *Petala* obovato-spathulata, 1·5 mm. longa.

Nigeria : Northern Provinces ; Vom, Bauchi Plateau, 1000-1500 m., *Dent Young* 92 (type).

A specimen collected in French Guinea (without locality) by *Farmar*, No. 286, may be a more mature condition of this species ; the leaves are long-petiolate, broadly oblong-lanceolate, about 12 cm. long and 4 cm. broad ; young fruits narrowly elliptic, 2 cm. long.

Combretum platypterum *Hutch. et J. M. Dalz.*, comb. nov.—*Cacoucia platyptera* Welw. Sert. Angol. 24 (1869) ; Hemsl. in Hook. Ic. Pl. t. 2549. *Cacoucia villosa* Laws. in Oliv. Fl. Trop. Afr. 2 : 433, partim. *C. paniculata* Laws, l.c. 434 (non *Combretum paniculatum* Vent.). *Cacoucia Barteri* Hemsl. in Kew Bull. 1897 : 267. *Combretum Lawsonianum* Engl. et Diels in Engl. Monogr. Afr. Pfl. 3 : 96 (1899). *Campylochiton platypterus* Hiern in Cat. Welw. Afr. Pl. 1 : 354 (1898).

A common climbing shrub with showy red flowers, widely distributed from Sierra Leone to the Nile districts, the Belgian Congo and Angola.

Combretum crotonoides *Hutch. et J. M. Dalz.*, sp. nov. : affinis *C. collino* Fres., sed axe inflorescentiae glabro vel fere glabro differt.

Ramuli leviter lepidoti. *Folia* elliptica, apice brevissime et obtuse acuminata, basi anguste rotundata, 7–10 cm. longa, 3–3·5 cm. lata, supra leviter infra densissime lepidota, squamis imbricatis cinereo-viridibus, nervis lateralibus utrinsecus 9 infra prominulis marginem versus ramosis ; petioli 1–1·5 cm. longi, laxe lepidoti. *Racemi* axillares, circiter 6 cm. longi ; axis glaber. *Ovarium* dense lepidotum, 4 mm. longum. *Calycis* tubus late turbinatus, 3 mm. longus, extra laxe lepidotus, lobis late triangularibus extra glabrescentibus ciliatis. *Fructus* non visus.

Senegal : without locality, *Heudelot* 187.

Combretum relictum *Hutch. et J. M. Dalz.*, sp. nov.; affinis *C. sokodensi* Engl., sed ramulis puberulis, foliis ovatis infra breviter et dense tomentellis differt.

Ramuli puberuli, costati. *Folia* ovata vel subtriangulari-ovata, acuta, basi late cuneata, 10–11 cm. longa, 5–6·5 cm. lata, supra glabra, infra breviter et dense tomentella, nervis lateralibus utrinsecus circiter 9 infra conspicuis, nervis tertiariis obliquis; petioli usque ad 1 cm. longi, supra tomentelli. *Racemi* axillares, fasciculati, usque ad 6 cm. longi; axis molliter tomentosus. *Ovarium* tomentosum. *Calyx* extra pubescens.

Senegal: without locality, *Heudelot* 747.

Combretum Mildbraedii *Hutch. et J. M. Dalz.*, sp. nov.; foliis magnis basi cordatis infra minute lepidoto-glandulosis, floribus laxe paniculatis distincta.

Ramuli purpurascentes, rufo-puberuli, mox glabri. *Folia* oblongo-elliptica, breviter et obtuse acuminata, basi cordata, 14–16 cm. longa, 6–8 cm. lata, infra squamis glandulosis minutis numerosis instructa, nervis lateralibus utrinsecus 6–8; petioli 1 cm. longi, subteretes, supra leviter pubescentes. *Inflorescentia* terminalis, laxe paniculata, ubique puberula. *Ovarium* breviter tomentosa. *Calycis* tubus 1 mm. longus. *Petala* clavato-orbicularia, parva.

French Guinea: Timbo, Kouria and neighbourhood, Nov., *Chevalier* 14792. Togo: Misahöhe, Nov., *Mildbraed* 7305 (type).

Combretum homalioides *Hutch. et J. M. Dalz.*, sp. nov.; affinis *C. obanensi* Hutch. et J. M. Dalz., sed foliis late ovatis infra obscure glandulosis differt.

Arbor 8 m. alta; ramuli glabri. *Folia* ovata vel ovato-elliptica, obtuse acuminata, basi subacuta, 10–16 cm. longa, 6–9 cm. lata, infra obscure et minute glandulosa, nervis lateralibus utrinsecus circiter 8 infra prominentibus, tertiariis numerosis obliquis; petioli 1 cm. longi. *Inflorescentia* laxe paniculata, ubique puberula, ramis spiciformibus gracilibus. *Flores* albi, fragrantes. *Ovarium* viscidum, glabrum. *Calyx* extra glaber. *Discus* villosus.

Nigeria: Southern Provinces; Onitsha, *Barter* 1803.

Combretum Dalzielii *Hutch.*, sp. nov.; affinis *C. ghasalensi* Engl. et Diels, sed axe inflorescentiae et calyce viscido vix pubescente, foliis acute acuminatis differt.

Arbor vel frutex; ramuli teretes, straminei, glabri. *Folia* 2–3-nata, ovato-lanceolata, acute acuminata, basi cuneata, 8–14 cm. longa, 3–4·5 cm. lata, margine undulata, utrinque glabra, interdum viscida, nervis lateralibus utrinsecus circiter 9 utrinque prominentibus; petioli 1–2 cm. longi. *Inflorescentia* ramosa, fere glabra. *Ovarium* laxe pubescens. *Calycis* lobi ovato-triangulares, intra villosi. *Fructus* late ellipticus, emarginatus, 3 cm. longus, 2 cm. latus, glaber.

Gold Coast: Northern Territories, Daboiya, *Dudgeon* 102. Nigeria: Northern Provinces; Katagum, Dec., *Dalziel* 221 (type); *Elliott* 167; Mutwe, *Foster* 76.

A tree yielding a gum, called "Mumie"; Vernacular name "Wiyandamo" (Foster).

Combretum obanense *Hutch. et J. M. Dalz.*, sp. nov.; affinis *C. homalioidei* Hutch. et J. M. Dalz., sed foliis ellipticis infra glabris, nervis tertiariis obscure reticulatis differt.—*C. paucinervium* Engl. et Diels, var. *obanense* Bak. f.

Ramuli breviter puberuli. *Folia* elliptica, breviter et obtuse acuminata, ad basin subacutam rotundata, 8–11 cm. longa, 4·5–5·5 cm. lata, glabra, nervis lateralibus utrinsecus 5–6 arcuatis marginem versus ramosis; petioli 1 cm. longi. *Flores* numerosi, laxe paniculati. *Ovarium* puberulum, 2 mm. longum.

Nigeria: Southern Provinces; Oban, *Talbot* 1676.

Rhizophoraceae.

Anisophyllea purpurascens *Hutch. et J. M. Dalz.*, sp. nov.; ab *A. laurinae* R. Br., foliis basi cordatis junioribus sericeo-pilosis et roseo-purpureis differt.

Arbor; ramuli juniores purpurascentes adpresse pilosi, maturi brunnei, glabri. *Folia* ovato-oblonga, acute et longe acuminata, basi cordata et 5-nervia, 6–8 cm. longa, 2·5–3 cm. lata, juniora purpurascentia et sericea, demum glabra; petioli 3 mm. longi. *Racemi* axillares, pauciflori, laxe pilosi; bracteae lineares, 2·5 mm. longae. *Alabastra* late ovoidea, 1·5 mm. longa, pubescentia.

Nigeria: Southern Provinces; Oban, *Talbot* (Herb. Kew.).

Hypericaceae.

Psorospermum umbellulatum *Hutch. et J. M. Dalz.*, sp. nov.; affinis *P. glauco* Engl., sed foliis obovatis minoribus infra leviter punctatis differt.—*P. tenuifolium* A. Chev. Explor. Bot. Afr. Occid. Franç. 51, partim, non Hook. f.

Frutex, ramulis glabris, lenticellatis, junioribus molliter tomentosis. *Folia* obovata, utrinque acuta, 4–6 cm. longa, 2–3 cm. lata, infra glabra et leviter punctulata, nervis lateralibus utrinsecus 8 utrinque prominulis; petioli 0·5 cm. longi. *Inflorescentia* axillaris, pauciflora; pedicelli usque ad 0·5 cm. longi, pubescentes. *Sepala* oblongo-ovata, 2–3 mm. longa, extra pubescentia, demum glabra. *Petala* obovata, intra villosa. *Fructus* junior glaber.

French Guinea: Ditinn, Apr., *Chevalier* 12949; Timbo, Mar., *Chevalier* 12447, 12548; between Ditinn and Timbo, Mar., *Chevalier* 12629; Kouria, *Dumas in Herb. Chevalier* 18186. Sierra Leone: Kamakuia, May, *Thomas* 267 (type); without locality, *Burbridge* 542, 545.

Psorospermum Thompsonii *Hutch. et J. M. Dalz.*, sp. nov.; affinis *P. laxifloro* Engl., ramulis molliter tomentosis, foliis ovato-ellipticis infra nervis pubescentibus differt.

Frutex parvus, ramulis cano-tomentosis. *Folia* ovato-elliptica, basi cuneata, apice subacuta, 8–11 cm. longa, 3–5 cm. lata, infra glauca et nervis pubescentibus, parce punctulata, nervis lateralibus utrinsecus circiter 6 intra marginem elongatis et remote conjunctis ; petioli vix 1 cm. longi, tomentosi. *Inflorescentia* terminalis, late cymosa, demum glabrescens ; pedicelli fructiferi usque ad 1·5 cm. longi. *Sepala* oblonga, 4 mm. longa, extra costata, glabra. *Fructus* globosus, 8 mm. diametro, stylis clavatis coronatus.

Gold Coast : near Drobo, Apr., *Thompson* 64 (type) ; Kratchi, *Anderson* 40. Togo : Kpedji, June, *Von Doering* 13.

Vismia leonensis var. **macrophylla** *Hutch. et J. M. Dalz.*, var. nov. ; a typo foliis circiter 15 cm. longis et 5–6 cm. latis basi rotundatis nervis lateralibus utrinsecus 14 differt.

Ivory Coast : Baoulé-Sud ; Toumodi, fr. Aug., *Chevalier* 22384.

GUTTIFERAE.

Symphonia gabonensis var. **macrantha** *Hutch. et J. M. Dalz.*, var. nov. ; a typo floribus majoribus ultra 1 cm. longis differt.

Throughout the coastal region from Sierra Leone to Angola and in Uganda. We have seen the following specimens :—*Aylmer* 55. *Johnson* 913. *Talbot* 368, 220. *Mann* 2279. *Zenker* 3660, 4364. *Dawe* 52, 251. *Gossweiler* 8696. *Welwitsch* 1052. *Brown* 150.

Garcinia granulata *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *G. nobili* Engl., sed nervis lateralibus utrinsecus minoribus differt.

Arbor parva ; ramuli angulares vel subalati, glabri, internodiis elongatis. *Folia* late elliptica, abrupte acuminata, basi rotundata et leviter inaequilatera, 10–15 cm. longa, 6–8 cm. lata, chartacea, supra nitida, nervis lateralibus utrinsecus 8, nervis tertiariis inconspicuis ; petioli 1 cm. longi. *Flores* non visi. *Fructus* late ellipsoideus, utrinque acutus, circiter 4 cm. longus, 3 cm. diametro, crebre et grosse verrucosus.

Sierra Leone : Gola, *Unwin & Smythe* 58.

Garcinia gnetoides *Hutch. et J. M. Dalz.*, sp. nov. ; affinis G. *densiveniae* Engl., sed foliis acutis vix acuminatis venis supra obscuris, racemis longioribus differt.—*Xanthochymus quadrifarius* A. Chev. Explor. Bot. Afr. Occid. Franç. 54, non Oliver.

Arbor parva ; ramuli acute quadrangulares vel subalati, glabri. *Folia* elliptica, basi subacuta, acute acuminata, 14–15 cm. longa, 5–6 cm. lata, glabra, nervis lateralibus utrinsecus circiter 8 basalibus tribus a costa sub angulo acuto ceteris sub angulo lato abeuntibus ; petioli 1 cm. longi, carinati. *Inflorescentia* quadrifaria, circiter 3 cm. longa, pluriflora ; pedicelli vix 1 cm. longi. *Calycis* lobi ovati, 1·5 mm. longi. *Petala* orbicularia, 6–7 mm. diametro.

Ivory Coast : Bingerville region, *Chevalier* 15157 (type) ; Abidjean railway, *Chevalier* 15620. Gold Coast : Bonsa River, *Vigne* 222.

Garcinia laurifolia *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *G. punctatae* Oliv., foliis late ellipticis, nervis lateralibus paucioribus intermediis prominentibus differt.

Ramuli lenticellati. *Folia* late elliptica, basi cuneata, apice longe acuminata, 10–18 cm. longa, 4–7 cm. lata, pellucido-punctata glabra, infra nitidula, nervis lateralibus utrinsecus circiter 12 gracilibus marginem versus conjunctis et laxe ramosis, secondariis prominulis cum lateralibus parallelis ; petioli 1 cm. longi, apicem versus incrassati. *Flores* non visi. *Pedicelli fructiferi* 0·8 cm. longi, crassi, angulares. *Fructus* junior globosus, parce pubescens, stigmatibus 4 spongiosis parvis coronatus.

Sierra Leone : Ninia, Talla Hills, *Scott Elliot* 4806.

Garcinia golaensis *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *G. laurifoliae* Hutch. et J. M. Dalz., sed foliis breviter et sensim acuminatis basi subrotundatis differt.

Arbor mediocris ; ramuli subteretes, juniores leviter complanati. *Folia* oblongo-elliptica, basi fere rotundata, breviter et sensim acuminata, 8–12 cm. longa, 3–5 cm. lata, opaca, infra verruculoso-punctata, nervis lateralibus numerosis supra prominentibus infra laxioribus marginem versus laxe ramosis ; petioli 1 cm. longi, transverse verrucosi. *Flores* et fructus non visi.

Sierra Leone : Gola, *Unwin & Smythe* 67.

Garcinia brevipedicellata *Hutch. et J. M. Dalz.*, sp. nov. ; affinis *G. ovalifoliae* Oliv., sed alabastris majoribus, foliis obovatis subabrupte acuminatis distincte resinosis differt.

Arbor usque ad 8 m. alta ; ramuli teretes, juniores costati. *Folia* anguste obovata, abrupte acuminata, basi breviter cuneata, circiter 12 cm. longa et 5 cm. lata, sicco laete viridia, chartacea, nervis lateralibus numerosis arcuatis prominulis, infra lineis resinosis obliquis notata ; petioli vix 1 cm. longi. *Flores* axillares, glomerati, cymulis trifloris brevissime pedunculatis. *Sepala* ovato-orbicularia, 6 mm. longa, glabra, lineis crebris resinosis ornata. *Petala* obovata, 1·3 cm. longa. *Stamina* 3 mm. longa.

Nigeria : Southern Provinces ; Oban, *Talbot* 1503.

Scytopetalaceae.

Scytopetalum Tieghemii *Hutch. et J. M. Dalz.*, sp. nov. ; foliis anguste oblongo-ellipticis basi acute cuneatis longe acuminatis distincta.—*Rhaptopetalum Tieghemii* A. Chev. Explor. Bot. Afr. Occid. Franç. 122, nomen.

Arbor parva, densifoliata ; ramuli graciles, purpurascentes, glabri. *Folia* lanceolata vel oblongo-elliptica, basi acute cuneata, longe caudato-acuminata, 4·5–9 cm. longa, 2–3·5 cm. lata, chartacea, nervis lateralibus utrinsecus circiter 5. *Flores* breviter racemosi, pauci ; pedicelli complanati, 3–4 mm. longi, fructiferi vix 1 cm. longi. *Calyx* patelliformis, 1·5 mm. longus. *Petala* infra connata,

6 mm. longa. *Fructus* ovoideus, acutus, 2 cm. longus, leviter costatus.

Sierra Leone: Matotoka, *Thomas* 1269, 1341. Ivory Coast: various localities, *Chevalier* 15423, 15580, 16192, 16231, 16252 (type), 17681. Gold Coast: Bawdia, Apr., *Vigne* 953, 974: Tarkwa, *Thompson* 44.

TILIACEAE.

Glyphaea lateriflora *Hutch. et J. M. Dalz.*, comb. nov.—*Grewia lateriflora* G. Don Gen. Syst. 1: 549 (1831). *Glyphaea grewioides* Hook. f. Ic. Pl. t. 760 (1848); Oliv. Fl. Trop. Afr. 1: 267.

Widely distributed in Tropical Africa.

Desplatzia lutea *A. Chev.* Explor. Bot. Afr. Occid. Franç. 88, nomen; species foliis elongato-oblongis longe acuminatis crasse et distanter dentatis distincta.

Arbor parva; ramuli leviter flexuosi, lenticellati, glabri. *Folia* elongato-oblonga, longe acuminata, ad basin rotundatum leviter angustata, 12–25 cm. longa, 4-6·5 cm. lata, crasse et distanter dentata, infra glabra, nervis lateralibus utrinsecus circiter 10 a costa sub angulo 45° abeuntibus; petioli 1–1·5 cm. longi; stipulae triangulares, acuminatae, 3–4 mm. longae, tomentellae. *Sepala* linearilanceolata, 1·2 cm. longa, tomentella.

Ivory Coast: Dyola country, Apr., *Chevalier* 21323 (type). Nigeria: Southern Provinces; Ibadan, Nov., *Punch* 50.

Duboscia viridiflora *Hutch. et J. M. Dalz.*, comb. nov.—*Diplanthemum viridiflorum* K. Schum. in Engl. & Prantl. Nat. Pflanzenf. Nachtr. 1: 234 (1897).

Extends from Southern Nigeria (Oban) to the Congo region.

Grewia cissoides *Hutch. et J. M. Dalz.*, sp. nov.; affinis *G. suffructicosae* K. Schum., sed petalis angustioribus basi rotundatis, gynophorio breviori differt.

Frutex usque ad 1·25 m. altus; caules simplices, tomentosi, internodiis elongatis. *Folia* late ovato-elliptica, basi plus minusve cordata, usque ad 15 cm. longa et 11 cm. lata, serrulata, supra scabrida vel subbullata, infra molliter tomentosa, basi digitate 5-nervia; petioli usque ad 2 cm. longi; stipulae lineares vel filiformes, 1 cm. longae, pubescentes. *Cymae* pluriflorae, subsessiles; pedicelli 1 cm. longi. *Sepala* linearia, 1 cm. longa. *Fructus* carpellis 3–4 fere liberis tuberculatis.

French Sudan: near Bama, *Chevalier* 941. Dahomey: Djongon, *Chevalier* 23851; Atacora Mts., 500 m., *Chevalier* 23949. Nigeria: Northern Provinces; Nupe, *Barter* 1662, 3438; Yola, Apr., *Dalziel* 54 (type); Kontagora, Jan., *Dalziel* 108.

XXXIII.—THE ORCHID-FLOWERED BUTTERWORTS.

T. A. Sprague.

The orchid-flowered butterworts would hardly be recognized without close inspection as belonging to the genus *Pinguicula* by those familiar only with the common butterwort, *Pinguicula vulgaris* L., and the related species, placed by Alphonse De Candolle in his section *Pionophyllum* (DC. Prodr. viii. 28). The general appearance of the flowers is very like that of some orchids, balsams or violets, hence the sectional name *Orcheosanthus* (" Orchid-flower ") given to the group by Alphonse De Candolle. The diagnostic characters of this section are derived from the corolla, which has a flat limb with subequal lips, an extremely short tube, and a long spur.

So far as is known, *Pinguicula* sect. *Orcheosanthus* is confined to the mountains of Mexico and Guatemala. A. De Candolle recognized four species : (1) *P. oblongiloba* A.DC., based on a coloured drawing from Mociño and Sessé's Mexican collection ; (2) *P. orchidioides* A.DC. from the State of Oaxaca ; (3) *P. moranensis* H.B.K. from Hidalgo ; and (4) *P. caudata* Schlecht., first discovered by Schiede in Vera Cruz. A fifth species, *P. flos-mulionis*, also from Vera Cruz, was added by Morren (Belg. Hort. 1872, 371, t. 27), and the new name *P. Bakeriana* Hort. Sander was proposed for a plant exhibited at the Royal Horticultural Society in 1881, and figured in "Gardeners' Chronicle," 1881, xv. 541, fig. 102, 103. In the following year, however, *P. Bakeriana* was reduced to *P. caudata* (Bot. Mag. t. 6624). The name *P. Rosei* was given in 1911 by W. Watson to a plant which was closely related to *P. caudata*, but differed slightly in the form of the leaves and the colour of the flowers. This was figured in " Gardeners' Chronicle," 1911, Ser. 3, xlix. 82, fig. 42. In the same year the most distinct of all the orchid-flowered butterworts was described by T. S. Brandegee (Univ. Calif. Publ. Bot. iv. 190) under the name *P. gypsicola*. This is a native of San Luis Potosí, and differs from all the other species of Sect. *Orcheosanthus* in its lanceolate-linear leaves. It was subsequently figured in the Botanical Magazine, t. 8602 (1915).

Apart from *P. gypsicola* T. S. Brandegee, the species of sect. *Orcheosanthus* are very critical. Hemsley (Biol. Centr.-Amer., Bot. ii. 471) came to the conclusion that all those described up to the beginning of 1882 were forms of a single species, but this view is not confirmed by a study of the published and unpublished illustrations of the " forms " in question, nor by their geographical distribution. The group is one in which comparative study of living plants of the various species is required in order to arrive at a satisfactory classification. The leaves exhibit seasonal dimorphism, winter rosettes of small leaves alternating with summer rosettes of large ones. Important characters are drawn from the shape and pose of the winter and summer leaves, the general appearance of the rosettes, the pose of the flowers and in particular the direction of the

spur, whether spreading or descending. Some of these characters cannot be verified from dried specimens however carefully prepared these may be. Unfortunately the greater part of the dried material contained in herbaria has been pressed without any special precautions, so that in many cases even the shape of the corolla-lobes cannot be ascertained without difficulty.

In collecting herbarium material of one of the orchid-flowered butterworts, a photograph should if possible be taken of the entire plant. A rosette should be pressed horizontally so as to show the number and arrangement of the leaves, and detached leaves illustrating the variations in shape and size should be dried separately. A coloured sketch of the flower showing the pose of the corolla-lobes and spur is important. One or more corollas should be detached and dried separately so as to show the exact shape of the lobes. The shape of the filaments may yield useful characters, so these also should be drawn. Owing to the numerous gaps in our knowledge of the several species, a satisfactory analytical key cannot at present be supplied, but it is hoped that the following annotated enumeration of the described species will be of assistance in determining material belonging to this Section. The species are arranged in chronological order with their more important references, brief descriptive notes, and an indication of their " type-locality " or geographical distribution.

Enumeration of described species.

P. moranensis *H.B.K.* Nov. Gen. ii. 226 (1818); Alph. DC. in DC. Prodr. viii. 27 (1844).

Flowering from winter rosette. Leaves sessile, spathulate, obtuse, 1·2 cm. long. Peduncles 10 cm. long. Corolla violet, lower lip white-blotched near the base. Ovary violet.—Kunth's description of the corolla as " ringens " might suggest that *P. moranensis* belonged to the section *Pionophyllum*, but for the fact that the spur is described as filiform, longer than the corolla.

Mexico. Hidalgo: Moran, 2400 m., *Humboldt & Bonpland* (type).

A specimen, *Coulter* 932, from Zimapan, Hidalgo (Herb. Kew.) has been referred tentatively by Dr. Stapf to *P. moranensis*, and agrees fairly well with the very incomplete description of that species (except that the corolla is not ringent). The leaves, however, are distinctly petiolate, and rather smaller, the peduncles only 5–7·5 cm. long, and the flowers smaller. It may be a starved or juvenile state of *P. moranensis*.

P. caudata *Schlecht.* in Linnaea, vii. 393 (1832); Alph. DC. in DC. Prodr. viii. 28 (1844).

Flowering from a rosette of small leaves surrounded by a few larger ones. Leaves " oval or suborbicular," 1·2–3·8 cm. long, narrowed below, and more or less petiolate. Peduncles 5–12·5 cm.

long. Corolla purple, lower lip 1·2 cm. long, deeply tripartite, lobes narrowly cuneate, spur descending (*Schiede*), 2·5–3 cm. long.

Mexico. Vera Cruz: Cuesta grande de Chiconquiaco, Sept. 1829, *Schiede* (type).

P. orchidioides *Alph. DC.* in DC. Prodr. viii. 27 (1844).—*P. caudata* Benth. Pl. Hartweg. 70 (1840), non Schlecht.

Flowering from the summer rosette. Leaves oblong, narrowed into a distinct petiole, reflexed, 1·7–2·5 cm. long. Peduncles 7·5–13 cm. long. Corolla purple, spur apparently spreading, 2–2·5 cm. long. Closely related to *P. caudata*, but apparently differing in the sharply reflexed oblong leaves.

Mexico. Oaxaca: San Felipe, July, *Andrieux* 130 (type); Totontepeque, *Hartweg* 509.

The plant figured in Bot. Mag. t. 4231 (1846) as *Pinguicula orchidioides* seems to differ in several respects. The summer leaves are spathulate and proceed from the centre of a dense winter rosette of small ovate acute leaves: the latter, however, may be merely the exposed upper parts of more or less spathulate leaves. The corolla-lobes appear to be considerably broader, but this may be due to the type-specimens of *P. orchidioides* being badly dried. The spur is shown as spreading, and the two upper corolla-lobes as overlapping. The lower corolla-lobes are obovate-cuneate. The plant is stated to have been introduced from Real del Monte, and specimens collected at that locality by Coulter, no. 930, may perhaps represent the same species. The winter leaves of no. 930 (Herb. Hook.), however, are narrowly spathulate or linear-spathulate, while in no. 930 (Herb. Benth.) there are a few lanceolate acute scales round the summer-leaves.

P. oblongiloba *Alph. DC.* in DC. Prodr. viii. 27 (1844); Calques Dess. Fl. Mex. t. 1071, fig. 2 (1874).

Flowering from the summer rosette. Leaves spathulate-orbicular, 3·5–4 cm. long. Peduncles 8–9·5 cm. long. Corolla purple-violet, lobes obovate-oblong, spur spreading, 2–3 cm. long.

Mexico. Locality not known, described from a drawing in Mociño and Sessé's collection.

A specimen, *Pringle* 2554 (Herb. Kew. et Mus. Brit.) from Guadalajara, Jalisco, distributed as *P. caudata*, resembles the drawing except that the corolla-lobes appear to be broader.

P. flos-mulionis *Morr.* in Belg. Hort. 1872, xxii. 371, t. 27.

Flowering from the summer rosette. Leaves obovate, 5 cm. long, 3–3·5 cm. broad. Peduncles 5–7·5 cm. long. Corolla purple-violet, throat and base of lobes white, lower lobes broadly obovate-cuneate, spur spreading, 3 cm. long.

Mexico. Vera Cruz: Paso del Macho. Raised by Messrs. Jacob-Makoy of Liège from seeds collected by M. Omer de Malzinne.

P. Bakeriana *Hort. Sander* ex Gard. Chron. 1881, xv. 541, fig. 102, 103.—*P. caudata*, J. D. Hook. in Bot. Mag. t. 6624 (1882); Duchartre in Bull. Soc. Bot. France, xxxiv. 207-215 (1887); non Schlecht.

Flowering both from the winter and summer rosettes (Bot. Mag.). Leaves of winter rosettes numerous, densely imbricate, ovate, acute, those of summer rosettes few, spreading and recurved, obovate, 2·5–10 cm. long. Peduncles 12·5–17·5 cm. long. Corolla rosy-lilac (Gard.Chron.) or deep bright violet-purple (Bot. Mag.), lower lobes obovate-cuneate, more or less overlapping, at least in the lower half, spur descending, 3–4 cm. long. The corolla varies greatly in size, the limb being 3 cm. long in one flower and 4·5 cm. long in another flower of the plant figured in Bot. Mag. t. 6624.

Mexico or Central America. The only information about the native country of *P. Bakeriana* is the editorial statement in Gard. Chron. 1881, xv. 541: "we believe the plant comes from Central America."

A specimen collected by Parry and Palmer, no. 694, in the region of San Luis Potosí, at an altitude of 1800–2400 m., closely approaches the type material of *P. Bakeriana*, apparently differing only in its elongated petioles (6 cm. long) and the relatively narrower corolla-lobes. It seems very probable that it is a mere form of *P. Bakeriana*, and that the latter may have come originally from San Luis Potosí. What appears to be another form of the same species has been collected by Schaffner, no. 321 (Mus. Brit.) in San Luis Potosí. It seems to differ in having obovate corolla-lobes, much narrowed at the base.

P. Rosei *W. Wats.* in Gard. Chron. 1911, Ser. 3, xlix. 82, fig. 42; Gard. Chron. 1919, lxv. 31, fig. 12.

Flowering both from the winter (fig. 42) and summer rosettes (fig. 12). Winter leaves very numerous, all small. Corolla violet or violet-purple, lobes broadly cuneate, spur descending.—Very incompletely described, but evidently closely related to *P. caudata*. It is represented by a photograph and a coloured drawing in the collection at the Kew Herbarium.

Mexico. Locality not known. A small plant stated to have been collected by Dr. J. N. Rose somewhere in Mexico was received at Kew from the United States Department of Agriculture in or about 1908.

P. gypsicola *T. S. Brandegee* in Univ. Calif. Publ. Bot. iv. 190 (1911); Stapf in Bot. Mag. t. 8602 (1915).

Flowering from the summer rosette, which has numerous lanceolate-linear leaves 4–6 cm. long. Peduncles 4–8 cm. long. Corolla rose-purple, lobes oblong, spur spreading, 2–3 cm. long.

Mexico. San Luis Potosí: Minas de San Rafael, on wet gypsum rocks, fl. Nov. 1910, *C. A. Purpus* 4486 (type); fl. June 1911, *C. A. Purpus* 4886A (both numbers in Mus. Brit.).

In herbaria all the species except *P. gypsicola* are generally included under *P. caudata* (sensu lato), as suggested by Hemsley, and it is admittedly very difficult, if not impossible, to identify much of the dried material in a more definite manner. Comparison of published illustrations, however, suggests that there are several distinct species of this group in addition to *P. gypsicola*. Thus *P. flos-mulionis* and "*P. orchidioides*" (Bot. Mag. t. 4231) are shown with more or less spreading spurs, whereas the spur in *P. Bakeriana* and *P. Rosei* is sharply descending. The upper corolla-lobes of "*P. orchidioides*" overlap, whereas those of *P. flos-mulionis* and *P. Bakeriana* are divergent. The lower corolla-lobes of *P. Rosei* are broadly cuneate, whereas the other three have them obovate-cuneate, and those of *P. caudata* are narrowly cuneate. *P. flos-mulionis* and *P. Bakeriana* have the corolla nearly as broad as it is long, while *P. caudata* and *P. orchidioides* have relatively narrower corollas. When along with these floral characters the differences in the shape of the summer-leaves is taken into consideration, it is difficult to escape the conclusion that more than one species is represented in these various illustrations.

For the solution of the problem, however, living plants of the following species are required from their type-localities: *P. moranensis*, from Moran, Hidalgo; "*P. orchidioides*" (as figured in Bot. Mag. t. 4231), from Real del Monte, Hidalgo; *P. caudata* from Chiconquiaco, between Misantla and Jalapa, Vera Cruz; *P. flos-mulionis* from the Paso del Macho, between Vera Cruz and Cordoba; *P. orchidioides* from San Felipe, Oaxaca; and *P. Bakeriana* (the form collected by Parry and Palmer) from San Luis Potosí. It would then be possible to give adequate descriptions of these species, and to indicate their diagnostic characters. Their inter-relationships and geographical distribution, however, could not be satisfactorily investigated except by study in the field.

XXXIV.—CONTRIBUTIONS TO THE FLORA OF SIAM.*

ADDITAMENTUM XXV.

Hydnocarpus calvipetala *Craib* [Flacourtiaceae-Pangieae]; a speciebus aliis ad subgenus *Taraktogenos* (Hassk.) relatis foliis haud tomentosis, floris masculi petalis pagina utraque et filamentis glabris distinguenda.

Arbor circa 8–10 m. alta (ex *Kerr*); ramuli iuventute angulati, pilis paucis fulvis adpressis instructi, rubri, cito glabri, mox cinereo-corticati. *Folia* saepissime oblonga, apice longius acuminata vel caudato-acuminata, basi saepe parum inaequilateralia, cuneata vel latere altero cuneata, altero rotundata, usque ad 24 cm. longa et 7 cm. lata, rigide chartacea, sicco subtus pallidiora, pagina utraque glabra, nervis lateralibus utrinque 6–7 sat obliquis saltem superioribus intra marginem conspicue anastomosantibus supra conspicuis

*Continued from *K.B.*, 1928, p. 72.

vel subconspicuis subtus prominentibus, nervis transversis numerosis inter se parallelis pro parte maxima horizontalibus pagina utraque prominulis, margine integra, anguste cartilaginea et recurva; petioli circa 2 cm. longi, basi et apice incrassati, primo rubri, mox cinerei. *Inflorescentia* ♂ axillaris, pedunculo communi circa 1 cm. longo suffulta, umbelliformis; pedicelli ad 1·5 cm. longi, glabri. *Sepala* 5, imbricata, saepissime elliptica, apice rotundata, 8–9 mm. longa, 5–6 mm. lata, utrinque glabra, margine ciliolata. *Petala* 9, rotundata, vel elliptica, apice rotundata, circa 4 mm., rarius ad 5·5 mm., diametro, facie utraque glabra, margine praesertim superne longe ciliata. *Squamae* carnosae, ambitu late oblongae, usque ad 3 mm. longae et 2·5 mm. latae, apice pilosae. *Stamina* circa 17, filamentis glabris ad 6 mm. longis, antheris 3 mm. longis apiculatis longitudinaliter dehiscentibus, connectivo lato.

Langsuan, Ban Kraye, 100 m., common in evergreen forest, *Kerr* 11994.

Impatiens Putii *Craib* [Balsaminaceae]; herba annua, glabra, stipulis deficientibus, foliis alternis subcarnosis paucinervosis, floribus solitariis axillaribus inter maiores, sepalo postico limbo saccatim infundibulari, alis inter se connatis, vexillo basi ad 9 mm. horizontali dein recto distincta.

Herba ut videtur annua, glabra, caule erecto anthesi ineunte 9 cm. alto circa 3 mm. diametro terete basi rubro apicem versus rubro-maculato. *Cotyledones* sub anthesin persistentes, limbo elliptico-oblato apice emarginato basi late rotundato ad 13 mm. longo et 16 mm. lato sat carnoso integro, petiolo suberecto 12 mm. longo. *Folia* inferiora subalterna, superiora distincte alterna, inferiora suboblata, superiora ovata, apice acute acuminata, basi subcordata, circa 18 mm. longa, 15–18 mm. lata, viridia, subtus pallidiora, sat crassa, glabra, nervis lateralibus utrinque 2–3 supra obscuris vel fere obscuris subtus conspicuis vel obscuris, nervulis omnino obscuris, serrulata, petiolo 1–1·5 cm. longo glabro apice canaliculato foliorum inferiorum suberecto superiorum obliquo suffulta; stipulae omnino deficientes. *Pedicelli* axillares, solitarii, ad 3·5 cm. longi, purpureo-puniceo-maculati, circa 1·3 cm. supra basem articulati et ibi bracteola lineari circa 2 mm. longa instructi. *Sepala* 3; duo lateralia inaequilateralia, latere postico dimidio ovata, antico suboblonga, viridi-cuspidata, 8 mm. longa, 5·5 mm. lata, basi purpureo-punicea, apicem versus pallescentia; posticum (labellum) limbo saccato-cymbiformi 2 cm. longo ore elliptico 2 cm. longo 1·3 cm. lato extra postice purpureo-puniceo-venoso antice pallescente intra inferne antice sulphureo, calcare inflexo 1 cm. longo apice integro obtuso pallide viridi. *Vexillum* oblato-obovatum, apice emarginatum, basi ad 9 mm. horizontale dein ad 1·2 cm. erectum dorso medio carinatum, apice et margine pallide purpureo-puniceum, medio et inferne pallescens; alae inter se connatae, stipite 1 cm. longo suffultae, lobo basali subelliptico 9 mm. longo 8 mm. lato

apiculato distali oblongo 2 cm. longo 1 cm. lato apiculato, apice fere ad medium inter se liberes. *Filamenta* pallida, 6 mm. longa, apice inter se libera, antheris lacteis 2·25 mm. longis. *Ovarium* pallidum, glabrum, 6 mm. longum.

Described from plants which flowered at Aberdeen in May of this year. These were raised from seed collected in Bangkok by Dr. Kerr, the Bangkok plants having been raised originally from seed collected at Sapli.

Surat, Chumpawn, Sapli, *Put* 1020.

Anplectrum stellulatum *Geddes* [Melastomaceae-Medinilleae]; ab *A. glauco* Triana ramis foliis cymisque hirsutioribus differt.

Frutex scandens, ramis primo quadrangularibus minute stellato-hirsutis mox teretibus glabris. *Folia* opposita, ovato-lanceolata, apice obtuse acuminata vel caudata, basi subcordata, 8·5–13 cm. longa, 2·6–4·3 cm. lata, supra viridia, nitentia, minute stellato-puberula vel glabra, subtus, praesertim ad nervos, stellato-pubescentia, nervis 5 pagina superiore impressis inferiore prominentibus, margine revoluta, petiolo 4–6 mm. longo dense et ferrugineo-stellato-hirsuto et patente setoso suffulta. *Panicula* laxa, ramulis stellato-hirsutis, nonnullis patente glanduloso-pilosis. *Receptaculum* minute stellato-hirsutum, parte inferiore glanduloso-pilosum. *Calyx* fere truncatus. *Petala* 4, pallide rosea (ex *Kerr*), triangulari-ovata, acuta, basi cuneata, 9 mm. longa, 6 mm. lata, glabra. *Stamina* 4 maiora, 4 minora, filamentis 4·5–5·5 mm. longis, antheris maioribus circa 9 mm. longis basi ante bituberculatis post appendiculatis, antheris minoribus 4 mm. longis. *Ovarium* 4-loculare, apice septis 4 instructum; stylus 12·5 mm. longus, glaber. *Fructus* subglobularis, calyce persistente, 8 mm. longus, 6·5 mm. diametro, glaber; semina obovoidea.

Nakawn Tai, 200 m., evergreen forest, *Kerr* 5870.

Blastus stellulatus, *Geddes* [Melastomaceae-Oxysporeae]; a *B. Cogniauxii* Stapf foliis pagina inferiore ad nervos stellato-hirsutis, receptaculo stellato-hirsuto differt.

Frutex erectus, ramis pallide brunneis primo sulcatis vel paulo compressis dense stellato-hirsutis mox teretibus glabris. *Folia* opposita inter se aequalia, lanceolata, apice longe et gracile acuminata, basi late cuneata, obtusa, 8–17 cm. longa, 2·4–4 cm. lata, supra fusco-viridia, glabra, subtus pallidiora, dense et minute glanduloso-punctata, ad costam nervosque pilis stellatis instructa, nervis e basi 3 vel 5, nervo intramarginali tenui, nervis transversis subhorizontalibus inter se parallelis et sat distantibus supra conspicuis vel subconspicuis subtus prominulis, margine crenulata, petiolo 1–1·7 cm. longo primo dense stellato-hirsuto mox plus minusve glabrescente suffulta. *Inflorescentia* terminalis, paniculata, 4–5 cm. longa, floribus umbellatis; pedicelli 1·5–2 mm. longi, pilis stellatis dense instructi. *Receptaculum* dense stellato-hirsutum. *Calycis* segmenta 4, brevia. *Petala* 4, luteo-rubra (ex *Dr. Smith*), rotundata,

subito caudata, 2·5 mm. diametro, extra pilis stellatis perpaucis ornata. *Stamina* 4, filamentis 3·5 mm. longis, antheris 4–5 mm. longis attenuatis. *Ovarium* 4-loculare; stylus 10 mm. longus, glaber.

Nakawn Sritamarat, Kao Luang, 1600 m., *Dr. Eryl Smith* 721.

Eugenia Collinsae *Craib* [Myrtaceae-Eugenieae]; species quoad folia *E. gratae* Wight similis sed fructu pallido *E. zeylanicae* Wight affinis a qua receptaculo haud verrucoso recedit.

Ramuli glabri, primo paulo compressi, graciles, mox teretes vel plus minusve angulati, cortice rubro-brunneo obtecti. *Folia* opposita vel interdum subopposita, lanceolata, oblongo-lanceolata, vel suboblonga, apice acuminata vel subacuminata, basi cuneata vel rotundato-cuneata, interdum parum inaequilateralia, 4–10·5 cm. longa, 1·5–4·2 cm. lata, coriacea, supra sicco brunnescentia vel pallide viridia vel subglauca, subtus glauca vel subglauca, supra distanter punctata, subtus costa excepta eglandulosa vel inferne costam versus parce glandulosa, costa supra impressa subtus glandulosa prominente, nervis lateralibus utrinque numerosis (circa 20 aliis paulo minus conspicuis interiectis) supra vix conspicuis subtus gracilibus prominulis rectis intra marginem anastomosantibus, margine integra, parum revoluta, petiolo 3–6 mm. longo supra acute canaliculato suffulta. *Inflorescentia* axillaris, rarius etiam terminalis, pedunculo communi brevi incluso circa 8 cm. longa, e cymis racemosim dispositis inferioribus pedunculo vix 1 cm. longo suffultis superioribus sessilibus constituta, et rhachi et pedunculo paulo angulatis, bracteis parvis deciduis, floribus sessilibus vel pedicellis ad 3 mm. longis suffultis. *Receptaculum* circa 4 mm. longum, sicco plus minusve glaucum, corrugatum sed haud verrucosum, apice ad 2·5 mm. excavatum. *Sepala* circa 1 mm. longa. *Petala* calyptratim decidua. *Stamina* usque ad 1 cm. longa, antheris parvis. *Stylus* staminibus paulo brevior; ovarium 2-loculare. *Fructus* sicco pallidus, subglobosus, saepissime circa 7 mm. diametro; semen solitarium, cotyledonibus convolutis.

Between Sriracha and Nawng Yai Bu, 30 m., *Mrs. D. J. Collins* 782.

Barringtonia Marcanii *Craib* [Myrtaceae-Barringtonieae]; species quoad folia *B. Helferi* C. B. Clarke similis sed floribus sessilibus, ovario angulato recedens, a *B. pterocarpa* Kurz petiolis brevioribus, floribus maioribus, sepalis oblongis haud triangulari-ovatis distinguenda.

Arbor 4–5 m. alta (ex *Kerr* et *Marcan*); ramuli interrupte fistulosi, ad 16 mm. diametro, cortice pallide brunneo vel stramineo obtecti. *Folia* late oblanceolata vel oblongo-oblanceolata, apice acuminata, basi angustata, decurrentia, 37–74 cm. longa, 11–18·5 cm. lata, coriaceo-chartacea vel subcoriacea, glabra, sicco viridia, subtus

parum pallidiora, nervis lateralibus utrinque 22–30 supra conspicuis saepissime subprominentibus subtus prominentibus intra marginem anastomosantibus, nervulis pagina utraque prominulis, margine denticulata, inferne obsolete denticulata, petiolo 1–1·5 cm. longo crasso suberoso suffulta. *Spicae* terminales (?), saltem 40 cm. longae, rhachi sat crassa glabra ; flores punicei (ex *Marcan*). *Receptaculum* 1 cm. longum, conspicue 4-angulatum. *Calyx* fere ad basem 4-fidus, segmentis late oblongis apice rotundatis circa 11 mm. longis et 9 mm. latis ciliatis. *Petala* 4, oblongo-obovata, 2·5 cm. longa, 1·4 cm. lata, revoluta. *Filamenta* ad 5 cm. longa, antheris paulo ultra 1 mm. longis circa 1 mm. latis. *Ovarium* 4-loculare, stylo gracili 7 cm. longo ; ovula loculo quoque 8.

Kaw Chang, 5 m., forest, *Marcan* 1285 (*type*). Kaw Chang, Klawng Mayom, 30 m., evergreen forest by stream, *Kerr* 6811.

Homalium crenulatum *Geddes* [Samydaceae-Homalieae] ; ab *H. longifolio* Benth. foliis subtus tomentosis, floribus minoribus, ab *H. minutifloro* Kurz foliis subtus tomentosis, inflorescentia dense pubescente differt.

Arbor circa 8 m. alta (ex *Kerr*), ramis iuventute hirsutis. *Folia* alterna, elliptica, apice subito acuminata vel obtusa, basi late cuneata, 8·5–15·5 cm. longa, 4·8–6·8 cm. lata, supra viridia vel brunnea, minute pubescentia, subtus tomentosa, nervis lateralibus utrinque 6–10 pagina inferiore prominentibus, margine crenulata, petiolo 7 mm. longo crasso tomentoso suffulta. *Racemi* 14–18 cm. longi, indivisi, rhachi dense pubescente ; flores parvi, pedicellis 2 mm. longis pubescentibus suffulti. *Calycis* segmenta 6, lanceolata, 1·5 mm. longa, dense pubescentia. *Petala* 1·75 mm. longa, 0·75 mm. lata, margine albo-ciliata. *Stamina* 6, ob petala posita, filamentis 2–2·75 mm. longis filiformibus, antheris subrotundatis minutis. *Ovarium* 1-loculare ; styli quattuor, 1·75 mm. longi.

Lôi, Wang Sapung, 200 m., scrub jungle, *Kerr* 8780 (*type*). Chiengmai, Mê Wang, 280 m., deciduous forest by stream, *Winit* 1392.

Homalium glabrifolium *Geddes* [Samydaceae-Homalieae] ; ab *H. grandifloro* Benth. foliis minoribus, nervis magis numerosis subtus prominentibus, floribus minoribus sessilibus differt.

Arbor circa 4 m. alta (ex *Kerr*), ramis iuventute quadrangularibus cito teretibus. *Folia* alterna, lanceolato-elliptica, apice obtuse acuminata, basi late cuneata, 6·6–9·7 cm. longa, 2·5–3·6 cm. lata, supra fusco-viridia, nitentia, glabra, subtus pallida, glabra, nervis lateralibus utrinque 9–10 pagina utraque prominulis, margine integra, petiolo 9 mm. longo suffulta. *Racemi* breves, usque ad 5 cm. longi, indivisi, minute pubescentes ; flores sessiles, pubescentes. *Calycis* segmenta 7, ovata, 3 mm. longa, 3·25 mm. lata, omnino pubescentia, medio longitudinaliter venata. *Petala* 7, alba (ex *Kerr*), ovato-lanceolata, 2·75 mm. longa, 1·5 mm. lata, omni parte pubescentia. *Stamina* 42, per 6 in fasciculo ob petala posito,

staminodiis inter fasciculos pubescentibus. *Ovarium* 1-loculare, pubescens ; styli 3–5, lineares.

Kanburi, Wangka, 200 m., limestone rocks, *Kerr* 10475.

Homalium verruculosum *Craib* [Samydaceae-Homalieae] ; ab *H. undulato* King foliis glabris, floribus minoribus, staminibus per 5 oppositipetalis recedit.

Arbor circa 10 m. alta (ex *Kerr*) ; ramuli graciles, primo puberuli, cito glabri, cortice rubro-brunneo vel cinereo-brunneo obtecti, lenticellis numerosis verruculosi. *Folia* oblanceolata, oblongo-oblanceolata, vel oblongo-elliptica, apice obtuse acuminata, basi cuneata, saepe inaequilateralia, 6–10·5 cm. longa, 2–3·8 cm. lata, coriacea vel subcoriacea, sicco brunnescentia, subtus pallidiora, glabra, supra nitida vel subnitida, nervis lateralibus utrinque circa 10 gracilibus pagina utraque prominulis intra marginem anastomosantibus, nervulis numerosis utrinque subprominulis, margine grossius serrata vel crenato-serrata, petiolo 3–7 mm. longo suffulta. *Racemi* axillares (vel etiam terminales ?), pedunculo communi 2·5–3·5 cm. longo incluso 7–9 cm. longi, pedunculo puberulo, rhachi superne tomentelli ; bracteae et bracteolae deciduae ; pedicelli circa 7 mm. longi, puberuli, supra medium articulati. *Receptaculum* infundibulare, circa 2 mm. longum, apice 3·5 mm. diametro, cinereo-tomentellum. *Sepala* 6, lineari-lanceolata, obtusa, 4 mm. longa, 1·5 mm. lata, facie utraque cinereo-tomentella. *Petala* 6, cuneata vel oblongo-cuneata, 5·5 mm. longa, 3 mm. lata, utrinque cinereo-tomentella, ciliata. *Stamina* per 5, oppositipetala, filamentis gracilibus circa 2 mm. longis glabris. *Disci* lobi oppositisepali, tomentosi. *Carpella* 3, tomentosa, stylis 3 tomentosis apicem versus glabrescentibus.

Surat, Ta Kanawn, 300 m., evergreen forest on rocky limestone hill, *Kerr* 12330.

Begonia Smithiae *Geddes* [Begoniaceae] ; a *B. praeclara* King caule evoluto, petiolis multo brevioribus crassioribus densius hirsutis, ovario 3-loculari differt.

Herba, caule foliis petiolisque sicco brunneo-rubris. *Folia* rotundato-ovata, apice acuminata, basi lateribus paribus cordata, 6–20 cm. longa, 3–11 cm. lata, supra fusco-rubra, dense pilosa vel pubescentia, pilis basi bulbatis, subtus pallidiora, dense pilosa, nervis circa 9 ab apice petioli radiantibus pagina inferiore prominentibus, margine serrata, dense ciliata, petiolo 1·9–5 cm. longo longe et patente piloso suffulta. *Inflorescentia* axillaris, pedunculo dichotome ramoso bracteato haud dense piloso ; pedicelli 1–2 cm. longi. *Floris* ♂ perianthium 4-merum, roseum (ex *Dr. Smith*) ; partes duae exteriores subrotundatae, 2 cm. longae, 1·4 cm. latae, dorso parce bulbato-pilosae, duae interiores obovatae, 1 cm. longae, 6 mm. latae, glabrae. *Stamina* permulta, fere libera, antheris obovoideis. *Floris* ♀ perianthium 5-merum, roseum (ex *Dr. Smith*) ; partes inter se fere aequales, oblongae, obtusae, venatae, 12–14 mm.

longae, circa 6 mm. latae, glabrae. *Ovarium* 3-alatum, ala maiore circa 2 cm. lata apice truncata horizontali, alis minoribus circa 2 mm. latis, 2-loculare, placentae lamellis loculo quoque 2, glabrum ; styli 3, haud connati ; stigmata contorta.

Nakawn Sritamarat, Kao Luang, 1800 m., *Dr. Eryl Smith* 714.

Uncaria quadrangularis *Geddes* [Rubiaceae-Naucleae] ; ab *U. glabrata* DC. foliis maioribus haud nitentibus subtus pubescentibus, corolla extra pubescente differt.

Frutex scandens, ramis quadrangularibus uncatis primo pubescentibus deinde glabris. *Folia* ovato-elliptica, apice acuminata, basi truncata, 7·5–11·5 cm. longa, 2·5–4·5 cm. lata, supra rubro-brunnea, praesertim ad nervos puberula, subtus luteo-brunnea, pubescentia, nervis lateralibus utrinque 6 pagina inferiore prominentibus, petiolo 6 mm. longo supra canaliculato pubescente suffulta ; stipulae lanceolatae, bifidae, 5 mm. longae. *Flores* in capitula axillaria solitaria 2·5 cm. diametro pedunculo 3–4 cm. longo puberulo mox uncato suffulta dispositi, bracteolati. *Calycis* tubus 2 mm. longus, basi pilos longos ferens ; lobi 5, lineares, 1 mm. longi, ciliati. *Corollae* tubus 6 mm. longus, extra pubescens ; lobi 5, obtusi, 2 mm. longi, pagina superiore pubescentes. *Stamina* 5, filamentis brevissimis, antheris apice obtusis basi sagittatis 1·5 mm. longis ; situ staminum ad basem tubi corollae distat 5 mm. ; summis antheris usque ad summum corallae tubum distat 1·5 mm. *Ovarium* 2-loculare ; stylus circa 11 mm. longus ; stigma fusiforme, 2·75 mm. longum.

Nan, Pu Huat, 1300 m., scrub, *Kerr* 4995.

Adina nobilis *Geddes* [Rubiaceae-Naucleae] ; ab *A. racemosa* Miq. petiolis crassioribus brevioribusque, inflorescentia maiore differt.

Arbor circa 20 m. alta (ex *Kerr*), ramis rubro-brunneis striatis lenticellatis glabris. *Folia* elliptica, apice acuminata, basi cuneata, 6–11 cm. longa, 4–6 cm. lata, supra passim viridia, passim brunnea, nitentia, subtus pallidiora, nitentia, omnino glabra, chartacea, nervis lateralibus utrinque 9–11, petiolo 1·5–2·5 cm. longo suffulta. *Capitula* in racemum terminalem rhachi puberulo disposita, inferiora axillaria, pedunculo usque ad 5 cm. longo ut rhachi puberulo suffulta, circa 2 cm. diametro, floribus sessilibus, bracteolis inter flores interspersis. *Calyx* brevis ; lobi 4–5, obtusi, circa 1 mm. longi, pubescentes. *Corolla* aestivatione valvata ; tubus 6 mm. longus, extra pubescens ; lobi 4–5, lanceolati, 1·5 mm. longi, dorso et intra ad marginem pubescentes. *Stamina* 4–5, filamentis 0·5–0·75 mm. longis, antheris 1·5 mm. longis mucronatis ; situ staminum ad basem tubi corollae distat 4 mm. ; summis antheris usque ad summum corollae tubum 1·75 mm. distat. *Ovarium* 2-loculare, ovulis in loculo quoque numerosis ; stylus 10–11 mm. longus, filiformis, stigmate capitellato 0·5 mm. diametro.

Dan Sai, Kao Keo Kang, 1100 m., evergreen forest, *Kerr* 5767.

Adina parvula *Geddes* [Rubiaceae-Naucleae]; ab *A. polycephala* Benth. foliis omnino minoribus breviter et obtuse acuminatis ad nervorum axillos subtus haud puberulis, pedunculis puberulis recedit.

Arbor circa 8 m. alta (ex *Kerr*), ramis primo brunneis striatis mox griseis lenticellatis. *Folia* elliptico-lanceolata, apice obtuse acuminata, basi cuneata, 9–12 cm. longa, 2·5–4 cm. lata, supra luteo-brunnea vel viridia, subtus pallidiora et minute nigro-maculata, omnino glabra, nervis lateralibus utrinque circa 8 pagina inferiore prominentibus, nervulis paulo conspicuis, petiolo 1·5–2 cm. longo supra canaliculato glabro suffulta. *Capitula* in cymas terminales laxas pedunculo communi 1–2 cm. longo suffultas disposita, pedunculo circa 1 cm. longo suffulta, floribus luteo-albis fragrantibus (ex *Winit*), bracteolis inter flores 1·5 mm. longis filiformibus. *Calycis* tubus 1 mm. longus; lobi 4–5, obtusi, 0·5 mm. longi, pubescentes. *Corollae* aestivatio valvata; tubus 2 mm. longus; lobi 4–5, obovati, 1·5 mm. longi, extra puberuli. *Stamina* 4–5, filamentis 0·5 mm. longis, antheris linearibus apiculatis 1 mm. longis 0·5 mm. latis; situ staminum ad basem tubi corollae distat 1·5 mm.; summis antheris usque ad summum corollae tubum distat 0·75 mm. *Ovarium* 2-loculare, ovulis in loculo quoque numerosis; stylus 3·5–4 mm. longus; stigmata globularia, 0·7 mm. diametro.

Lampang, Ban Ton, 280 m., open deciduous forest, *Winit* 675 (*type*). Lampang, 300 m., open deciduous forest, *Kerr* 4813.

Hedyotis sessilifolia *Geddes* [Rubiaceae-Hedyotideae]; ab *H. flexuosa* Ridl. foliis sessilibus angustioribus, cymis haud tam laxis rhachi breviore differt.

Herba circa 45 cm. alta, ramis sicco pallide viridibus striatis glabris. *Folia* elliptico-lanceolata, apice obtuse acuminata, basi cuneata, 3–10 cm. longa, 1·4–2·4 cm. lata, supra luteo-viridia, subtus albo-viridia, omnino glabra, nervis lateralibus utrinque circa 5 haud conspicuis, margine revoluta; stipulae ovatae, cuspidatae, 2 mm. longae. *Inflorescentia* terminalis, laxa, rhachi glabra; bracteae foliaceae, sessiles; bracteolae lanceolatae, 0·6 mm. longae. *Calycis* lobi 4, subacuti, 1·25 mm. longi, 1 mm. lati, glabri. *Corollae* tubus 1·9 mm. longus, extra glaber, intra ore hirsutus; lobi 4, lineari-lanceolati, 4 mm. longi, 1 mm. lati, dorso glabri, pagina superiore nisi apice pubescentes. *Stamina* 4, ore corollae tubi sita, filamentis circa 2 mm. longis, antheris 1·4 mm. longis. *Ovarium* 2-loculare, ovulis parvis loculo quoque numerosis; stylus 1·25 mm. longus; stigmata 2, linearia, 0·9 mm. longa.

Lôi, Pu Tong, 1000–1200 m., open grassy forest, *Kerr* 8838.

Hedyotis similis *Geddes* [Rubiaceae-Hedyotideae]; ab *H. molle* Wall., var *laxa* King foliis basi latis, cymis haud laxis, pedicellis brevioribus differt.

Herba scandens (ex *Kerr*), caulibus hirsutis. *Folia* ovato-lanceolata, apice acuminata, basi lata, nonnulla cuneata, 4·7–6·7 cm. longa, 2–3 cm. lata, supra sicco viridia, pubescentia, subtus praesertim ad nervos hirsuta, nervis lateralibus utrinque 4 pagina superiore impressis inferiore prominentibus, petiolo 2–4 mm. longo hirsuto suffulta ; stipulae circa 8-fidae, hirsutae. *Inflorescentia* terminalis atque axillaris, axibus hirsutis ; flores lutei (ex *Kerr*), umbellati ; pedicelli circa 1 mm. longi, parte dimidia inferiore pilosi. *Calycis* tubus longitudinaliter 4-striatus ; lobi 4, acuti, 0·5 mm. longi, ciliati. *Corollae* tubus 1·5 mm. longus, glaber ; lobi 4, deltoideo-lanceolati, acuti, 2·25 mm. longi, glabri. *Stamina* 4, ad os tubi corollae adfixa, filamentis 1·25 mm. longis crassis, antheris oblongis 0·5 mm. longis. *Ovarium* 2-loculare, ovulis in loculo quoque numerosis ; stylus stigmatibus duobus 0·75 mm. longus. *Fructus* 4-striatus, apice super calycem productus, 2·25 mm. longus, 2 mm. diametro ; semina numerosa.

Pattani, Kao Kalakiri, 600 m., climbing on bushes in evergreen forest, *Kerr* 7761.

Oldenlandia rosettifolia *Geddes* [Rubiaceae-Hedyotideae] ; ab *O. ovatifolia* DC. foliis modo basi caulis positis sessilibus glabris, cymis minoribus differt.

Herba erecta, 5–27 cm. alta, caule aut singulo aut ad quattor a foliis oreuntibus glabro vel puberulo. *Folia* ad caulis basem 4-verticillata, radice 2 foliis parvis, oblongo- vel rotundato-ovata, apice obtusa vel acuta, basi rotundata vel subito cuneata, sessilia, 1–6·5 cm. longa, 0·8–4·2 cm. lata, supra fusco-viridia, minute maculata, glabra, subtus albo-viridia, nervis lateralibus utrinque circa 5 pagina inferiore prominulis. *Inflorescentia* terminalis, cymosa, laxa, rhachi pedunculisque capillaribus glabris vel puberulis ; pedicelli 1–2 mm. longi, filiformes ; flores rosei (ex *Kerr*). *Calycis* lobi 4, deltoidei, obtusi, minuti. *Corollae* tubus 0·5 mm. longus ; lobi 4, lanceolati, subacuti, 1·9 mm. longi, 0·7 mm. lati, intra parce puberuli. *Stamina* 4, ore corollae tubi sita, filamentis circa 0·8 mm. longis, antheris lineari-oblongis apice obtusis basi emarginatis 1·25 mm. longis. *Ovarium* 2-loculare, ovulis in loculo quoque numerosis ; stylus circa 2 mm. longus ; stigmata 2, linearia. *Fructus* 2·5 mm. longus, 2·75 mm. diametro, parce puberulus ; semina numerosa, deltoidea.

Saraburi, Muak Lek, Kao Pang Sawang, *Noe* 118 (*type*). Saraburi Muak Lek, 200 m., bamboo forest, *Kerr* 9141.

Gardenia fusca *Geddes* [Rubiaceae-Gardenieae] ; a *G. Collinsae* Craib foliis elliptico-lanceolatis sicco fuscis pubescentibus, floribus maioribus, calycis lobis latioribus pubescentibus differt.

Frutex usque ad 1 m. altus (ex *Kerr*), ramulis primo puberulis mox glabris. *Folia* elliptico-lanceolata, apice subacuta, basi late cuneata, 3·7–7·7 cm. longa, 1·8–3·4 cm. lata, supra fusca, iuventute pubescentia, mox glabrescentia, subtus pubescentia, nervis

lateralibus utrinque 10–12 pagina utraque conspicuis, margine ciliata, petiolo 1–4 mm. longo hirsuto suffulta ; stipulae inter se connatae. *Inflorescentia* axillaris et terminalis ; flores 1–3, aut sessiles aut breve pedicellati, bracteolati. *Calycis* tubus 6 mm. longus, 3 mm. diametro, extra pubescens, intra hirsutus ; lobi 5–6, lineari-lanceolati, 2 mm. longi, 1·2 mm. lati, puberuli, ciliati. *Corolla* alba (ex *Kerr*) ; tubus 2·1 cm. longus, basi 4 mm. latus, apice 1·2 cm. latus, parte inferiore constrictus, pubescens ; lobi 5–6, ovato-oblongi, subacuti, venati, 1·3 cm. longi, 7–8 mm. lati, dorso pubescentes, margine ciliati. *Stamina* 5–6, ad corollae tubum infra os adfixa, filamentis 4 mm. longis tenuibus, antheris 14·5 mm. longis 1·8 mm. latis lineari-oblongis apice obtusis basi emarginatis dorso reticulatis glabris. *Ovarium* 1-loculare, ovulis numerosis ; placentae bifidae ; stylus 1·5–1·7 cm. longus, glaber ; stigmata contigua, unum fusiforme 15 mm. longum 4 mm. latum simulantia. *Fructus* subglobularis, calyce persistente ornatus, 10–17 mm. longus, 7–13 mm. diametro ; semina compressa, nigra, reticulata, 4 mm. longa, 2·5 mm. lata.

Mûang Pichit, 50 m., open scrub jungle, *Kerr* 5666.

Gardenia magnifica *Geddes* [Rubiaceae-Gardenieae] ; a *G. cambodiana* Pitard floribus multo maioribus differt.

Ramuli pallide grisei. *Folia* obovata, apice obtusa, basi cuneata, 4–5 cm. longa, 2·8–3·2 cm. lata, supra brunnea, resinifera, nitentia, parce pilosa, subtus viridia, resinifera, nitentia, nervis prope costam hirsutis, nervis lateralibus utrinque circa 9 adscendentibus conspicuis, margine revoluta, ciliata, petiolo 1–4 mm. longo pubescente suffulta. *Flores* terminales, solitarii. *Calyx* resiniferus ; tubus 3 mm. longus ; lobi 6, foliacei, 13 mm. longi, 3·5 mm. lati. *Corollae* tubus 2·6 cm. longus, parte superiore circa 8 mm. latus, parte inferiore 3·5 mm. latus, extra glaber, intra partis inferioris summo hirsutus ; lobi 6–7, rotundato-obovati, 2·4 cm. longi, 1·6 cm. lati, fere glabri. *Stamina* 6–7, ad summum corollae tubum adfixa, antheris linearibus apice mucronatis basi sagittatis 1·5 cm. longis circa 1·5 mm. latis. *Stylus* 2·7 cm. longus, glaber.

Prachuap, Sam Roi Yawt, under 50 m., open space in evergreen forest, *Kerr* 10894 (*type*). Buriram, Nang Rawng, dry sandy forest, *Anuwat* 12.

Gardenia saxatilis *Geddes* [Rubiaceae-Gardenieae] ; a *G. gummifera* Linn. f. foliis minoribus, corollae tubo multo breviore et angustiore differt.

Frutex circa 2 m. altus, multum divaricatus, cortice albo (ex *Kerr*). *Folia* obovata, obtusa, circa 2 cm. longa et 1·4 cm. lata, supra albo-viridia, nitentia, primo puberula, mox glabra, subtus albo-viridia, iuventute subtomentosa, deinde glabra, nervis lateralibus utrinque circa 9 pagina superiore impressis inferiore prominulis, margine inconspicue ciliata, petiolo 1 mm. longo pubescente suffulta ; stipulae ut annuli saepe persistentes. *Flores* albi (ex *Kerr*),

terminales, solitarii, pedicellis brevibus pubescentibus suffulti. *Calycis* tubus extra sericeo-hirsutus; lobi 6, deltoideo-lanceolati, acutissimi, carinati, 2·5 mm. longi, extra intraque sericeo-hirsuti. *Corollae* tubus 2·5 cm. longus, extra pubescens, intra infra medium hirsutus; lobi 6, obovati, apice obtusi, tenues, venati, 3·2–3·4 cm. longi, 1·5–1·8 cm. lati, extra ad basem parce pubescentes, intra glabri. *Stamina* 6, antheris linearibus apice mucronatis basi emarginatis 1·5 cm. longis 1 mm. latis sessilibus paullo exsertis. *Ovarium* 1-loculare, ovulis numerosis, placenta bifida; stylus 1·3 cm. longus, parce pubescens; stigmata bifida, basi ad 5 mm. connata, superne ad 13 mm. libera, glabra.

Nakawn Panom, Muk Tahan, 100 m., rocky ground, *Kerr* 8409 (*type*). Saraburi, Mênam Sak, 100 m., common among rocks on limestone hill, *Kerr* 7040.

Canthium berberidifolium *Geddes* [Rubiaceae-Vanguerieae]; a *C. parvifolio* Kurz foliis fasciculatis coriaceis, floribus sessilibus differt.

Frutex circa 3 m. altus, armatus, ramulis elongatis pubescentibus, brevibus barbatis. *Folia* fasciculata, obovata, apice obtusa, basi cuneata, 12–18 mm. longa, 5–8 mm. lata, supra luteo-viridia, nitentia, glabra, subtus parce pilosa, nervis lateralibus utrinque 2–3 supra impressis subtus prominulis, costa pagina inferiore valde prominente, margine revoluta, ciliata, lamina decurrente, petiolo 2 mm. longo subtus piloso suffulto. *Flores* axillares, 1–3-fasciculati; receptaculum pubescens; pedicelli brevissimi, apice bibracteolati, bracteolis inter se connatis ciliatis. *Calycis* tubus 0·5 mm. longus; lobi 5, deltoidei, acuti, 0·75 mm. longi, ciliati. *Corollae* tubus urceolatus, apice constrictus, 2 mm. longus, 2·5 mm. latus, intra praeter partem inferiorem dense barbatus; lobi 5, ovato-lanceolati, acuti, 3·5 mm. longi, 1·25 mm. lati, omnino glabri. *Stamina* 5, ad summum corollae tubum posita, filamentis subulatis 0·75 mm. longis, antheris circa 2 mm. exsertis ovatis apice acutis basi emarginatis 1·25 mm. longis 0·6 mm. latis dorso albo-maculatis. *Ovarium* 2-loculare, ovulis in loculis solitariis, sericeo-hirsutum; stylus 2 mm. longus, basi sericeo-hirsutus; stigma globulare, mitriforme, bilobatum, 1 mm. longum et latum.

Sriracha, Ao Kasu, under 10 m., scrub jungle, *Kerr* 4183 (*type*). Sriracha, *Mrs. D. J. Collins* 1458, *Marcan* 1370. Rachaburi, 80 m., open deciduous forest, *Winit* 517.

Coelospermum acuminatum *Geddes* [Rubiaceae-Morindeae]; a *C. scandente* Blume foliis maioribus ellipticis aut elliptico-lanceolatis, nervis magis numerosis, inflorescentia longiore differt.

Frutex scandens (ex *Kerr*), ramis iuventute brunneis paulo compressis striatis lenticellatis glabris mox albo-griseis. *Folia* elliptica vel elliptico-lanceolata, apice acuminata, basi cuneata, 9–12 cm. longa, 3–3·5 cm. lata, supra brunnea vel luteo-viridia, nitentia, glabra, subtus pallidiora, glabra, nervis lateralibus utrinque 7

pagina superiore haud conspicuis inferiore prominentibus, costa robusta, petiolo 1–1·5 cm. longo apice paulo alato glabro suffulta; stipulae inter se connatae, oblongo-lanceolatae, 5 mm. longae, 4 mm. latae, minute puberulae. *Inflorescentia* terminalis et axillaris, cymosa, axibus striatis glabris; flores umbellati, albi (ex *Kerr*), pedicellis 3–5 mm. longis suffulti. *Calyx* truncatus, circa 2 mm. longus. *Corollae* aestivatio valvata; tubus 4 mm. longus, extra glaber, intra circum filamentorum insertionem hirsutus; lobi 5–6, lineares, obtusi, 6 mm. longi, glabri. *Stamina* 5–6, ad tubum corollae supra medium adfixa, filamentis 2·5 mm. longis ad medium antherarum adfixis, antheris linearibus versatilibus 5 mm. longis circa 1 mm. latis; situ staminum ad basem tubi corollae distat 4 mm.; summis antheris usque ad summum corollae tubum 5 mm. distat. *Ovarium* 2-loculare, ovulis magnis et paucis; stylus 5·5 mm. longus, striatus; stigmata 2, linearia, 2·5 mm. longa.

Lôi, Kao Krading, 1200 m., edge of evergreen forest, *Kerr* 8736.

Coelospermum luteum *Geddes* [Rubiaceae-Morindeae]; a *C. biovulato* C. B. Clarke foliis haud coriaceis, inflorescentia multo longiore, floribus magis numerosis differt.

Frutex scandens (ex *Kerr*); ramuli primo subquadrangulares, breve puberuli, mox teretes, lenticellati, glabri. *Folia* elliptica, apice subito et breve caudata, basi cuneata, 9–13·5 cm. longa, 3·5–6·2 cm. lata, supra brunnea, nitentia, glabrescentia, subtus pallide brunnea, nitentia, glabra, nervis lateralibus utrinque circa 8 pagina utraque conspicuis, petiolo circa 1·5 cm. longo canaliculato glabro suffulta; stipulae 2 mm. longae, inter se connatae, ovato-rotundatae, glabrae. *Cymae* terminales, laxae, patentes, axibus minute pubescentes; pedicelli 8 mm. longi, pubescentes; receptaculum pubescens. *Calyx* truncatus, 1 mm. longus, 2·5 mm. latus, extra pubescens. *Corolla* lutea (ex *Kerr*); tubus 5 mm. longus, basi 1·9 mm. apice 2·5 mm. latus, extra striatus et puberulus, intra parte superiore pubescens; lobi 5, lineari-lanceolati, apicibus inflexi, 8·5 mm. longi, circa 2 mm. lati, extra et apud marginem inconspicue puberuli. *Stamina* 5, ad summum corollae tubum sita, filamentis 3 mm. longis a basi tubi 5 mm. distantibus, antheris 4 mm. longis tenuibus linearibus apice apiculatis basi sagittatis 5 mm. exsertis versatilibus. *Ovarium* 2-loculare, ovulis per loculum duobus; stylus filiformis, 5 mm. longus, glaber; stigmata 2, linearia, revoluta, basi connata, circa 3 mm. longa.

Sriracha, Ban Dan, 70 m., evergreen forest, *Kerr* 4150 (*type*), *Marcan* 175.

Lasianthus longisepalus *Geddes* [Rubiaceae-Psychotrieae]; a *L. rhinocerote* Blume foliis omnino latioribus basi cuneatis, petiolis longioribus, calycis lobis multo longioribus differt.

Frutex ad 2 m. altus (ex *Kerr*), ramis sicco dense luteo-tomentosis. *Folia* elliptico-oblonga, apice anguste acuminata, basi breve cuneata, 11–15 cm. longa, 3·4–5·5 cm. lata, supra luteo-viridia, nitentia,

glabra, subtus sicco luteo-tomentosa, nervis lateralibus utrinque circa 11 pagina superiore impressis inferiore prominentibus, margine late revoluta, petiolo 1–1·5 cm. longo crasso tomentoso suffulta. *Flores* albi (ex *Kerr*), axillares, solitarii, sessiles. *Calyx* dense pilosus; tubus 5–6 mm. longus; lobi 5–7, lineares, 13–14 mm. longi. *Corollae* tubus circa 13 mm. longus, extra et intra parte superiore dense pilosus, parte inferiore extra intraque glaber; lobi 5–7, lanceolati, apicibus saepe inflexi, 8 mm. longi, 2·5 mm. lati, omnino dense pilosi. *Stamina* 5–7, prope summum corollae tubi adfixa, filamentis circa 2·5 mm. longis, antheris oblongis circa 4 mm. longis ad marginem parce puberulis. *Ovarium* 5–7-loculare, ovulis in loculis singulis; stylus 5–7-lobatus, 11 mm. longus.

Chantabun, Kao Soi Dao, 1200–1400 m., common in evergreen forest, *Kerr* 9632.

Galium petiolatum *Geddes* [Rubiaceae-Galieae]; a *G. rotundifolio* Linn. foliis petiolatis differt.

Herba sub frutices crescens (ex *Kerr*), tenuis; caules quadrangulares, nodis pubescentes, primo inter nodos adpresse puberuli, mox glabri. *Folia* 4-verticillata, late elliptica, apice subacuta, basi subito cuneata, 1·3–2·5 cm. longa, 1·2–1·6 cm. lata, supra fusco-viridia, glabra vel parce puberula, subtus albo-viridia, puberula, nervis lateralibus 3 paginis ambabus conspicuis, margine ciliata, petiolo circa 3 mm. longo pubescente lamina decurrente suffulta. *Cymae* terminales et laterales, patentes, axibus puberulis bracteatis; pedicelli 1–3 mm. longi, arcuati, minute puberuli; flores minuti. *Calycis* tubus brevis, carnosus, 0·5 mm. longus. *Corollae* tubus 0·3 mm. longus; lobi 4, ovati, subacuti, 0·5–0·75 mm. longi. *Stamina* 4, inter corollae lobos sita, filamentis 0·25 mm. longis, antheris parvissimis obtusis. *Stylus* brevis; stigmata 2, linearia, stylo longiora. *Fructus* bilobatus, circa 1 mm. diametro, uncato-pilosus.

Doi Chiengdao, 1800 m., under bushes in evergreen clearing, *Kerr* 6577.

Solanum Sanitwongsei *Craib* [Solanaceae-Solaneae]; species nova haud armata foliis pinnatim lobatis, inflorescentia triflora subumbellata, calyce brevi vix accrescente, fructu globoso ad 1 cm. diametro distincta.

Frutex circa 1 m. altus (ex *Kerr*), partibus omnibus iuventute pilis stellatis tomentosus, ramulis teretibus demum parum glabrescentibus. *Folia* ambitu oblonga ovatave, apice obtusa, basi cordata, truncata, vel cuneata, saepissime inaequilateralia, 5–8 cm. longa, 3·5–7 cm. lata, chartacea, sicco supra saepissime pallide viridia, subtus cinereo- vel pallide fulvo-viridia, supra pilis stellatis brevibus rigidis sat densis scabridiuscula, subtus pilis stellatis tomentella, nervis lateralibus utrinque 3–5 cum costa supra conspicuis subtus prominentibus, nervulis obscuris, margine altius pinnatim lobata, lobis utrinque 2–3 saepissime apice rotundatis usque ad 2 cm. longis et latis petiolo 1–2 cm. longo supra canaliculato suffulta.

Inflorescentia racemosa, e floribus tribus subumbellatim dispositis constituta, apicem versus internodii orta, pedunculo communi brevi vel subnullo suffulta; flores cyanei (ex *Kerr*), pedicellis 8–15 mm. longis apicem versus paulo incrassatis indumento ei ramulorum simili tectis suffulti. *Sepala* 5, basi inter se breviter connata, quoad formam parum variabilia, saepissime oblongo-cuneata, apice obtuse acuminata, circa 4 mm. longa et 2 mm. lata, dorso stellato-tomentosa, intra ad acumen pilis paucis stellatis instructa, aliter glabra. *Petala* 5, basi ad 4 mm. inter se connata, dorso primo stellato-tomentosa, lobis oblongo-lanceolatis apice subacutis circa 8 mm. longis et 5 mm. latis supra parce pubescentibus. *Stamina* inter se aequalia; filamenta 1 mm. longa, glabra, antheris 6 mm. longis. *Discus* brevis. *Ovarium* 1·25 mm. altum, summo apice pilis paucis stellatis instructum, aliter glabrum; stylus 1 cm. longus, pilis stellatis nisi apice tectus, stigmate parvo subcapitato. *Fructus* maturus aurantiacus, subglobosus, ad 1 cm. diametro, nitidus; semina compressa, pallida, copiose punctulata, circa 2 mm. diametro.

Bangkok, cultivated, *Kerr*.

XXXV.—NEW CHINESE SPECIES OF VIOLA.

WILHELM BECKER.

Herr W. Becker has kindly undertaken the critical identification of a considerable amount of the material of the genus *Viola* in the Kew Herbarium. The following new species have been found amongst the Chinese specimens.

1. **Viola serrula** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging.); a *V. grypocerate* A. Gray foliis minoribus crassiusculis obscure viridibus plus minusve fuscis, floribus minoribus brevius calcaratis et calcari subinflato diversa.

Planta in herb. fusca, 5–10 cm. alta. *Caules laterales* adsunt, procumbentes et adscendentes, breviter articulati, e rhizomate orientes, adversus finem foliati et florentes. *Folia* basi cordata, late ovata, acuta, repando-serrata, breviter pubescentia, subtus glabra. *Stipulae* fuscae, angustae, longifimbriatae. *Rhizoma* verticale, reliquiis petiolorum stipularumque dense instructum. *Pedunculi* tenues, glaberrimi, folia superantes, circ. 2–3, in parte superiore bracteolis angustissimis circ. 3 mm. longis oppositis muniti. *Flores* parvi; *sepala* ovato-lanceolata, acutissima, fusco-punctata, appendicibus subelongatis angustis; *petala lateralia* papillaceo-pilosa; *calcar* crassiusculum, circ. 2–2·5 mm. longum, horizontaliter directum; *antherae thecis* dilute viridibus et connectivo fusco; *connectivi processus* triangularis, subelongatus, acutiusculus; *stylus* tenuis, erectus, basi non geniculatus, disperse fusco-lineatus, apice papillaceo-hirtellus, in rostellum semierecto-curvatum transiens. *Capsula* glabra, fusco-punctata.

China : Gan-chouen, *J. Cavalerie* 7168 (herb. Kew.), cum *V. ganchouenense* W. Beckr. ; Gan-chouen, *J. Cavalerie* (1912) 7775, cum *V. diffusa* et *V. stenocentra* Hayata.

2. **Viola rupestris** *Schm.* Neue Abh. Böhm. Ges. i. 60 (1791) sbsp. **Licentii** *W. Bckr.* sbsp. nov. ; in omnibus partibus distincte breviter pubescens ut typus ; stipulae elongatae, longe fimbriato-dentatae ; folia lata, partim subreniformia.
China Borealis : Kansou, S.E. ; Pei la hia, 1919, *E. Licent* sub 5137.

Stipules 1–1·2 cm. long ; their *fimbriae* 2–3 mm. long ; their greatest breadth in the middle as in typical *V. rupestris* ; *leaves* rather small, c. 2 cm. broad and 1·3 cm. long or less, subreniform or roundish ; *sepals* c. 7 mm. long, narrowly lanceolate. Undoubtedly belonging to *V. rupestris* and probably the representative of the type in China.

3. **Viola Monbeigii** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging.) ; foliis basi profunde cordatis in acumen sensim angustatis subglaberrimis crenato-serratis valde excellens.

Acaulis subglaberrima. *Rhizoma* elongatum, flexuosum, lignosum, disperse longiradicatum et subfibrillosum. *Stipulae* angustae, multum adnatae, usque circiter 1·5 cm. longae, albidae vel dilute virides. *Folia* obscure viridia, longe petiolata ; petioli subalati ; limbus foliorum basi profunde cordatus, in acumen sensim angustatum elongatus, subglaberrimus, crenato-serratus. *Flores* folia superantes, circ. 2–4, conspicui, in pedicellis subcrassis adversus medium bracteolatis apice vix curvatis ; *bracteolae* circ. 5 mm. longae ; *corolla* verosimiliter dilute colorata (albida ?) cum calcari circ. 2 cm. longa ; *sepala* ovato-lanceolata usque lanceolata, appendicibus distinctis subdilatatis et fisso-acutidentatis munita ; *petala* obovata, lateralia subbarbata ; *calcar* subrecurvatum, deorsum directum, *stylus* basi vix geniculatus, apice derupte deplanatus, vix rostratus.
China austro-occidentalis : sine loco indicato, *T. Monbeig* (Herb. Kew.) : Yunnan ; Tsekou, *T. Monbeig* (Herb. Kew.).

Plant with flowers up to 10 cm. high ; petioles c. 3 cm. long ; *lamina* of the leaves 2–3·5 cm. long, 1–2 cm. broad at the base ; *sepals* (excluding appendices) 5–7 mm. long and up to 2·5 mm. broad.

4. **Viola yunnanfuensis** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging.).

Planta acaulis perennis, caespitosa, polyphylla. *Rhizoma* abbreviatum, radicibus numerosis sublaevibus crassiusculus obsitum. *Stipulae* multum adnatae, angustae. *Folia* basi subcordata, ovata vel oblonga, glaberrima, obscure viridia, obtusa, plane vel subrotundato-crenata, longe petiolata. *Flores* folia paullum superantes, non conspicui ; *pedunculi* breviter bracteolati ; *sepala* lanceolata, appendicibus angustioribus subrectangularibus munita ; *petala*

oblonga, lateralia barbata ; *calcar* circ. 2 mm. longum, crassiusculum, subrecurvatum ; *ovarium* conoideum ; *stylus* basi geniculatus, apice horizontaliter deplanatus triangularis brevissime rostellatus.
China : Yunnanfu, *Ducloux* 667.

Plant in the flowering stage c. 10–12 cm. high ; *leaves* (including petioles) c. 8–10 cm. long, lamina c. 3 cm. long and 1·5 cm. broad ; *stipules* c. 1 cm. long, lacinae free c. 3 mm. long ; *sepals* (including appendices) 7 mm. long ; *petals* 8–9 mm. long and c. 3 mm. broad ; *spur* 2 mm. long.

5. **Viola Hancockii** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging.) ; foliis late ovatis profunde cordatis, subconspicuis, distincte crenatis, stipulis latis et floribus albis suaveolentibus a *Viola metajaponica* Nakai, *V. pekinensi* W. Bckr. et specibus similibus diversa.

Planta acaulis. *Rhizoma* crassum, anguste articulatum, abbreviatum, radicibus nonnullis sublaevibus munitum. *Stipulae* albidae, membranaceae, distincte latae, multum adnatae, laciniis liberis lanceolatis. *Folia* basi anguste profundeque cordata sinubus rotundatis, ceterum late ovata, subinciso-crenata, supra disperse pubescentia, subtus adversus basin subpubescentia et glabrescentia ; *petioli* angusti. *Flores* folia vix superantes, conspicui, cum calcari circ. 2 cm. longi ; *sepala* lanceolata vel late lanceolata, non conspicue appendiculata ; *petala* alba, suaveolentia, oblongo-obovata, lateralia barbata ; *calcar* elongatum, 6–7 mm. longum, deorsum curvatum ; *ovarium* subglobosum ; *stylus* basi vix geniculatus, apice deplanatus breviter rostellatus.
China : Peking, western hills, in shady places ; very rare ; 1887, *W. Hancock* 99 (Herb. Kew.) ; Peking (1876–78), *W. Hancock* 52 (Herb. Viol. W. Bckr. ex Herb. Kew.).

Roots elongate ; stipules c. 3 mm. broad and 1 cm. long ; leaves c. 4 cm. long, 3 cm. broad, some narrower ; *petioles* narrow, c. 3–5 cm. long ; *bracteoles* of the peduncle c. 5 mm. long ; *petals* 12–13 mm. long.

6. **Viola Duclouxii** *W. Bckr.* sp. nov. ; species ex affinitate *V. sikkimensis* W. Bckr. et specierum similium.

Planta acaulis, perennis, stolonifera. *Stolones* plures, procumbentes, 10–15 cm. longi, tenues, ad finem radicantes et plantas novellas rosulantes formantes, foliati et floriferi. *Stipulae* fuscae, lanceolatae, ad finem longe fimbriatae. *Folia basilaria* circ. 9, rotundata, plane serrata, basi subprofunde cordata, supra adversus margines subpubescentia et glabrescentia, subtus glabra ; *fol. stolonum* minora. *Sepala* lineari-lanceolata, fusca, longe et tenuiter fimbriata. *Flores* basilares et in stolonibus in fol. sinubus, breviter pedicellati ; *corolla* ? ; *sepala* lineari-lanceolata ; *capsula* parva, subglobulosa.
China : Yunnanfu, *Ducloux* 550 ; sine floribus collecta.

Basal leaves (including petiole) c. 4 cm. long; *petiole* 2–2·5 cm. long; *lamina* c. 1·5–2 cm. long and broad; *stolons* 10–12 cm. long; *leaves of the stolons* c. 1 cm. long and broad, shortly petiolate; *capsule* 4–5 mm. long.

7. **Viola grandisepala** *W. Bckr.* sp. nov.; ex affin. *V. Smithianae* W. Bckr. et spec. affin. sepalis late ovatis conspicuis distinguenda. *Planta* acaulis vel subcaulescens, stolonifera. *Rhizoma* verticale, elongatum. *Stolones* tenues, elongati. *Stipulae* fuscae, ovato-lanceolatae, acuminatae, integrae. *Folia* longe petiolata, basi profunde cordata, rotundata, plane rotundato-crenata, obtusiuscula vel subacutiuscula, adversus margines pubescentia et glabrescentia. *Flores* non conspicui, folia superantes; *sepala* late ovata, appendicibus latis truncatis, acutiuscula, ciliata; *petala* oblongo-obovata; *calcar* appendices calycis non superans; *stylus* ?
China occidentalis: Omi, 1904, *E. H. Wilson* (Exped. Veitch.) 4748, cum *V. Smithiana* W. Bckr.
Leaves c. 3·5 cm. long and 3 cm. broad, also smaller; *stipules* c. 12–14 mm. long and 3–4 mm. broad; *sepals* (including appendices) c. 8 mm. long and 4·5 mm. broad. *Whole plant* 7–10 cm. high.

8. **Viola lucens** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging.); ex affin. remota *V. Hookeri* W. Bckr. et *V. sikkimensis* W. Bckr.
Planta humilis, acaulis, albido-villosa, tenera, circ. 5–7 cm. alta, perennis, stolonifera. *Rhizoma* verticale, breviter articulatum, 1–2 mm. crassum, radicellatum, stolones tenues pilosos plantas novellas formantes emittens. *Stipulae* fuscae, lanceolatae, longi-fimbriatae. *Folia* longe petiolata, breviter albido-pilosa, basi profunde et anguste cordata, ceterum rotundiusculo-ovata, indistincte crenata, acutiuscula vel obtusiuscula; *petioli* longius villosi. *Flores* folia superantes; *pedicelli* pilosi, supra medium bibracteolati; *bracteolae* oppositae, angustae; *sepala* anguste lanceolata, pilosa, interdum glabrescentia, brevissime appendiculata; *petala superiora* et *lateralia* anguste oblonga, 10–11 mm. longa, haec basi pilis taeniaeformibus munita; *pet. infimum* naviculare, cum calcari 1–1·5 mm. longo latoque 9 mm. longum; *ovarium* globulosum; *stylus* basi geniculatus, apice pone marginatus in fronte derupte deplanatus, vix rostellatus.
China: Pin-fa, 1907-08, *J. Cavalerie* 3084 (Herb. Kew.) cum *V. pulla* W. Bckr.; Kouy-Tcheou, Gan-pin, 1910, *J. Cavalerie* 3084, sub nom. *V. diffusae* Ging. (Herb. *Delessert*.)

9. **Viola pulla** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging.); cum *V. Hookeri* W. Bckr. et *V. sikkimensi* W. Bckr. remote affinis.
Planta mox obscure fusco-colorata, acaulis, humilis, stolonifera. *Rhizoma* verticale, articulatum, elongatum, radicellatum; *radicellae* firmae. *Stipulae* latae, ovato-lanceolatae, fuscae, dense fimbriatae; *fimbriae* latitudinem stipularum non superantes.

Folia obscure viridia, posterius fusca, rotundata, rotundato-crenulata, acutiuscula, basi non profunde cordata, strigoso-pubescentia, breviter petiolata ; *petioli* pilis rigidis distantibus dense instructi. *Flores* folia vix superantes ; *pedicelli* villosi, supra medium longe bracteolati ; *bracteolae* 8–9 mm. longae, oppositae ; *sepala* lanceolata, pilosa, 5–6 mm. longa, appendicibus brevibus ; *petala* 6 mm. longa, oblonga ; *pet. lateralia* papillari-hirta ; *pet. infimum* breviter calcaratum ; *ovarium* conoideum ; *stylus* basi subgeniculatus, apice truncatus et deruptus, breviter rostellatus.
China : Pin-fa, 1907-09, *J. Cavalerie* 3084 (Herb. Kew.) cum *V. lucente* W. Bckr. ; Gan-chouen, *Cavalerie* sub 7171 (Herb. Kew.), cum *V. betonicifolia* Sm. sbsp. *nepalensi* W. Bckr. et *V. grypocerate* A. Gray.

10. **Viola gan-chouenensis** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging.) ; aliis speciebus non affinis.

Planta acaulis circ. 8 cm. alta (cum floribus longe pedicellatis), floribunda. *Radix* verticalis, sursum partita. *Stipulae* anguste lanceolatae, breves. *Folia* oblongo-ovata vel sublatiora, plane crenata, acutiuscula, basi subtruncata et in petiolum decurrentia, utrinque adpresso-pilosa. *Flores* folia superantes, subconspicui, *pedicelli* circa medium bracteolis angustis subelongatis 5 mm. longis instructi, glabri vel pilosi ; *sepala* ovata et ovato-lanceolata, appendicibus angustioribus subconspicuis subquadratis ; *petala superiora* obovata 9 mm. longa et 4·5 mm. lata ; *pet. lateralia* oblonga 1 cm. longa et 3 mm. lata, barbata ; *pet. infimum* elongato-triangulari-obovatum, 9 mm. longum ; omnia petala apice rotundata ; *calcar* subelongatum circ. 6 mm. longum, subinflatum, subsursum curvatum ; *stylus* basi subgeniculatus, clavatus, apice deplanatus et utrinque dilatatus et plane marginatus, in fronte distincte suberecto-rostellatus.
China : Gan-chouen, *J. Cavalerie* 7168 (Herb. Kew.) cum *V. serrula* W. Bckr. et *V. diffusa* Ging.

11. **Viola diffusa** *Ging.* in DC. Prodr. i. 298 (1824) var. **brevisepala** *W. Bckr.* var. nov. ; a typo sepalis ovato-lanceolatis, foliis ovatis differt.

Sepala ovato-lanceolata, circ. 4 mm. longa et 1·5 mm. lata ; *folia* late ovata, apice obtusa.
China : Kiukiang Lushan, 1889, *W. Hancock* 8 et 9.

12. **Viola Wilsonii** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging.) ; similis *V. diffusae* Ging., sed rhizomate perenni crasso et planta villoso-tomentosa differt.

Planta perennis. *Rhizoma* crassum ; planta in omnibus partibus dense albido-tomentosa ; *corolla* subconspicua, circ. 1 cm. longa, major quam in *V. diffusa*. In forma foliorum et stipularum a *V. diffusa* vix diversa.

Syn : *V. diffusa* var. *tomentosa* W. Bckr. in Beih. Bot. Centrlbl. xx. 2. 127 (1906).
China centralis : W. Hupeh, 1900, *E. H. Wilson* 245 ; typ. in Kew et Dahlem.

13. **Viola Pricei** *W. Bckr.* sp. nov. (Sect. *Nomimium* Ging. ; *Diffusae* W. Bckr.) ; ex affin. *V. diffusae* Ging. et huic speciei similis, etiam stolonifera ; tamen forma foliorum distincte diversa.

Folia triangulari-ovata, basi plane cordata, *adversus basin latissima*, circ. 8–10 inciso-crenulata, excisuris rotundatis, utrinque disperse pubescentia, circ. 2·5 cm. longa et basin versus 1–1·2 cm. lata, longe petiolata ; *stolones* tenues. *Flores* subconspicui.
Formosa : Urai, 1912, *W. R. Price* 306.

XXXVI.—DALZELLIA OR BELOSYNAPSIS.

T. A. Sprague and C. E. C. Fischer.

In connection with the preparation of Part viii. of Gamble's Flora of the Presidency of Madras it became necessary to determine the correct name under International Rules of the small genus of Commelinaceae originally described by Hasskarl (Flora, 1865, 593) under the name *Dalzellia*. This was based on *Cyanotis vivipara* Dalz. (Hook. Journ. Bot. 1851, iii. 226) a native of Western India. In 1881 *Dalzellia* Hassk. was treated by C. B. Clarke (DC. Monogr. iii. 242) as a section of *Cyanotis* D. Don, and widened to include *Cyanotis uniflora* Hassk., *Tradescantia capitata* Blume, and *Belosynapsis kewensis* Hassk. (Flora 1871, 259). *Dalzellia*, as thus enlarged, seems to be a very natural group, characterized by the absence of imbricating bracts, and is best treated as an independent genus. The question is whether it should bear the name *Dalzellia* Hassk. (1865) or *Belosynapsis* Hassk. (1871). *Dalzellia* had been previously used by Wight (Ic. v. part 2, 34 : 1852) for a genus of Podostemonaceae originally published as *Lawia* Griff. ex Tul. (Ann. Sc. Nat. sér. 3, xi. 112 : 1849), which itself is antedated by *Lawia* Wight (Calc. Journ. Nat. Hist. vii. 14 : 1846), a genus of Rubiaceae. *Dalzellia* Hassk. (1865) can be valid only if *Dalzellia* Wight (1852) is invalid. Before this point can be settled, the correct names for the two genera *Lawia* Wight (Rubiaceae) and *Lawia* Griff. (Podostemonaceae) must be determined.

The generic name *Lawia* Wight (1846) was based on *Lawia acuminata* Wight, a new species of Rubiaceae from Madras, and was accompanied by a generic description. It is therefore nomenclaturally valid under the International Rules, although it is now treated as a taxonomic synonym of *Mycetia* Reinw. in Syll. Ratisb. ii. 9 (1828). Hence the name *Lawia* Griff. ex Tul. (1849) is invalid under Art. 51 (2°) of the International Rules.

Two generic names, *Dalzellia* Wight and *Terniola* Tul. were proposed independently in 1852 to replace *Lawia* Griff. The first

was published in Jan. 1852 (*vide* Wight, Ic. vi. preface, p. viii). The second bears the date 1852, the month not being stated; it was presumably published before June, as it was reviewed in the "Gardeners' Chronicle" for June 12, 1852, p. 374. In the absence of further evidence *Dalzellia* Wight and *Terniola* Tul. must be regarded as being of the same date. In such a case Art. 46 of the International Rules provides that the name adopted by the first author who chose one of them in preference to the other must be retained. The name *Dalzellia* was adopted in 1860 by Thwaites (Enum. Ceyl. Pl. 223), but he cannot be said to have chosen it in preference to *Terniola*, as he did not mention the latter among the synonyms of *Dalzellia*, and apparently did not know of it or of Tulasne's monograph. The first author who made a choice seems to have been Weddell (DC. Prodr. xvii. 46 : Oct. 1873), and he adopted *Terniola*, citing *Dalzellia* as a synonym. Hence *Terniola* should be used for the genus in question. The possibility that further evidence may come to light establishing the priority of *Dalzellia* cannot, however, be entirely excluded, and it is therefore not certain that that name is invalid under the International Rules. Hence the later homonym *Dalzellia* Hassk. (1865) is not available for the genus of *Commelinaceae*, and the latter should be called *Belosynapsis* Hassk.

The synonymy of the three genera mentioned above is as follows :—

Mycetia *Reinw.* in Syll. Ratisb. ii. 9 (1828); K. Schum. in Engl. & Prantl, Nat. Pflanzenfam. iv. Abt. 4, 66 (1891); Gamble, Fl. Madras, 611 (1921).
Adenosacme Wall. Cat. n. 6280–6282 (1832), sine descr.; Endl. Gen. i. 552 (1838), descr.
Lawia Wight in Calc. Journ. Nat. Hist. vii. 14 (April 1846); Wight Ic. iii. part 4, p. 5, t. 1070 (Sept. 1846).
An Indo-Malayan genus of Rubiaceae.

Terniola *Tul.* in Arch. Mus. Par. vi. 189 (1852, semester 1); Weddell in DC. Prodr. xvii. 46 (1873); Hook. f. Fl. Brit. Ind. v. 62 (1890).
Lawia Griff. ex Tul. in Ann. Sc. Nat. sér. 3, xi, 112 (1849); Warming in Engl. & Prantl, Nat. Pflanzenfam. iii. Abt. 2A, 18 (1890); Gamble, Fl. Madras 1195 (1925); non Wight (1846).
Dalzellia Wight, Ic. v. part 2, p. 34 (Jan. 1852); Thwaites, Enum. Ceyl. Pl. 223 (1860).
Tulasnea Wight l.c. 35, tt. 1919, 1920, pro syn., non Naud. (1844).
Mnianthus Walp. Ann. iii. 443 (1853).
A genus of Podostemonaceae confined to India and Ceylon.

Belosynapsis *Hassk.* in Flora, 1871, liv. 259; hic emend. a C.E.C. Fischer.

Dalzellia Hassk. in Flora 1865, xlviii. 593, non Wight (1852).
Erythrotis Hook. f. Bot. Mag. t. 6150 (1875).
Cyanotis, sect. *Dalzellia* C. B. Clarke in DC. Monogr. iii. 242 (1881).

An Indo-Malayan genus of Commelinaceae comprising the following species: **Belosynapsis uniflora** *C. E. C. Fischer*, comb. nov. (*Cyanotis uniflora* Hassk.); **B. capitata** *C. E. C. Fischer*, comb. nov. (*Tradescantia capitata* Blume); **B. kewensis** *Hassk.*, the type-species; and **B. vivipara** *C. E. C. Fischer*, comb. nov. (*Cyanotis vivipara* Hassk.).

XXXVII.—MISCELLANEOUS NOTES.

The following appointments have been made by the Secretary of State for the Colonies:—Mr. S. Gillett, Assistant Agricultural Officer, Kenya; Mr. R. A. Altson, formerly Assistant Botanist and Mycologist, British Guiana, to be Assistant Mycologist, Department of Agriculture, Federated Malay States and Straits Settlements; Mr. J. C. Nauen, a Student Gardener, Royal Botanic Gardens, Kew, Horticulturist, Department of Agriculture, Bermuda; Mr. T. C. Cairns, B.Sc., Cotton Investigator, Tanganyika Territory; Mr. I. G. C. Squire, Assistant Manager, Oil Palm Plantation, Sierra Leone; Mr. A. S. Walford, B.A., Agriculturist, Jeanes School, Kenya Colony; Mr. M. T. Dawe, O.B.E., Commissioner of Lands and Forests, Sierra Leone, to be Director of Agriculture, Cyprus (*K.B.* 1902, 24; 1911, 65; 1915, 206; 1922, 198.)

We learn that Professor J. H. Faull, of the Department of Botany, University of Toronto, has been appointed Professor of Forest Pathology at Harvard University.

E. J. Wallis.—We regret to have to record the death of Mr. E. J. Wallis, which occurred on the 23rd February last His health had been failing for some years past. He was certainly one of the most talented photographers of trees, plants and garden scenery of his time, and it may safely be asserted that as long as any interest is taken in the gardening literature and plant portraiture of the early XXth century his name will be secure from oblivion. Trained in youth to the profession of wood engraving he found by middle age this source of livelihood slipping away from him. By the time of his death it had become virtually non-existent. He was not without private means, but as an alternative occupation and source of income he turned to photography; and his love of plants, together with the attraction of the open air, induced him to take up the portraiture of plant life. As no place could provide him with such a number and variety of subjects as Kew, he settled in the neighbourhood and for at least twenty years spent most of his working time in the Gardens. During this period he must have taken some thousands of photographs of landscape scenes, plants and flowers, many of which were

reproduced in current periodical literature. His pictures were also used for the *Illustrated Guide* to the Gardens and in horticultural and botanical books of the period, such as Watson's *Gardeners' Assistant*, Bean's *Trees and Shrubs*, and Dallimore & Jackson's *Handbook of Coniferae*. A considerable number of his photographs have been placed in No. IV Museum to show the habit of trees whose timber or other products are on exhibition there.

Wallis, besides being an expert in the technique of his profession, had also a strong artistic feeling. Given a subject to photograph he might always be trusted to make the best of it. In taking pictures of trees and open-air scenes especially he was wonderfully patient, waiting sometimes for hours to obtain the most suitable light and necessary stillness of the atmosphere.

Icones Plantarum Sinicarum.* Under this title the Department of Botany, College of Agriculture, National South-eastern University, Nanking, China, is issuing a folio publication. The first fascicle comprises 50 plates from original drawings with dissections, accompanied by descriptive letterpress in English with a translation in Chinese below. After the description in each case the distribution of the species is given throughout the Provinces of China where it is known to occur. This is followed in most cases by notes by one or other of the authors.

The first 14 subjects are Gymnosperms ; these are followed by a number of Dicotyledonous trees and Monocotyledons. Plate 50 is devoted to a new species of *Zephyranthes* from the Province of Chekiang, described here for the first time, and is interesting in adding another example to the list of genera found both in America and China.

The work, which is dedicated to Charles Sprague Sargent, is very well printed with ample margins, and many of the illustrations are excellent. C. B. V. M.

The Agricultural Journal of British Guiana.†—The Journal of the Board of Agriculture of British Guiana, which has been in existence since 1907, has now ceased to exist, and has given place to a new Journal, published by the Department of Agriculture, under the Editorship of the Director assisted by some of the senior officers of the Department.

Mr. Dash, the new Director of Agriculture, introduces this new Journal with a short account of the evolution of his Department.

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*"Icones Plantarum Sinicarum." Edited by H. H. Hu and W. Y. Chun: The Commercial Press Ltd., Shanghai, Feb. 1927. Fasc. I. Tab. i–l. Price $5.00.

†The Agricultural Journal of British Guiana. Vol. No. 1. March, 1928. Published by the Department of Agriculture, Georgetown, British Guiana, pp. 68, plates 2. Price 6*d*.

The inception of this was the Botanic Garden and Station at Georgetown, which Jenman took over in 1879 when he was appointed Government Botanist. About the same time Harrison was appointed Government Analyst, and for some years these two officers worked in collaboration over the many problems connected with agriculture and horticulture, where mutual assistance was necessary. On Jenman's death, Harrison was appointed Director of Science and Agriculture, which post included not only the work already mentioned but also that of Geologist. Under him the work was divided between a Government Botanist and Superintendent of the Gardens, and a Deputy Analyst and Geologist. As time went on other posts were created or merged. The Government Botanist became Assistant Botanist and Mycologist, and an Economic Biologist subsequently styled an Entomologist was appointed.

Sir John Harrison was also instrumental in starting in 1919 the British Guiana Sugar Planters' Experimental Station, and as Chairman had control though the station was not a part of the Department. An officer, trained as a chemist, was appointed as Superintendent of the Sofia Sugar Station, and various so-called Agricultural Instructors were locally recruited and appointed for work in the districts, but no attempt was made to develop Agricultural Research apart from that connected with the work of technical officers.

Mr. Dash, in his contribution to the first Number, gives an outline of his proposals for re-organizing the Department and the development of agricultural research, with the separation from the Department of those branches of science which have no direct bearing on agricultural improvement. This creates the opportunity for agricultural research on which all extension work in the districts must be based.

A marked feature of this new Journal is the inclusion of original articles which are likely to appeal to all branches of agriculture in the Colony. Among these is an article on the Imperial College of Tropical Agriculture at Trinidad, and its functions in the Caribbean, by Mr. G. Evans, the Principal of the College, a valuable paper on the biological control of insect pests, by Mr. L. D. Cleare, the Government Entomologist, a short note on the impermeability of Cane soils in British Guiana, its consequences and its amelioration, by Mr. M. Bird, and an " A.B.C." of Rice Culture, which should prove extremely useful to all rice growers in the Colony.

Besides these original articles the Journal contains selected Articles, Notes and Departmental News. The Journal is well got up and well printed. Its style is similar to that of the Agricultural Journal of India and the Tropical Agriculturist of Ceylon.

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